DAIKIN

EDUS281104

R-410A

Engineering Data

SkyAir

Cooling Only 60Hz
Heat Pump 60Hz

RZR-P, RZQ-P(9) series

INVERTER

DAIKIN AC (AMERICAS), INC.

SkyAir Engineering Data

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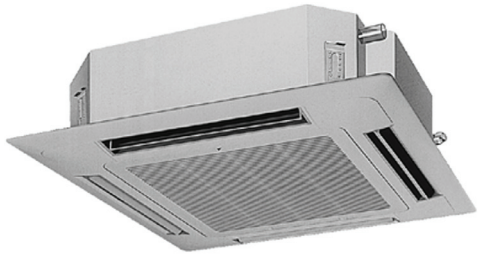
1. External appearance

1.1 Indoor unit

Ceiling mounted cassette type (Multi flow)

FCQ18PVJU / FCQ24PVJU / FCQ30PVJU
FCQ36MVJU / FCQ42MVJU



Ceiling suspended type

FHQ18PVJU / FHQ24PVJU / FHQ30PVJU
FHQ36MVJU / FHQ42MVJU

Wall mounted type

FAQ18PVJU / FAQ24PVJU

1.2 Outdoor unit

RZR18PVJU / RZR24PVJU / RZR30PVJU
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU

RZR36PVJU / RZR42PVJU
RZQ36PVJU9 / RZQ42PVJU9

2. Model name, power supply and nomenclature

2.1 Model name and power supply

2.1.1 Cooling Only

Indoor unit		Outdoor unit	Power supply, Compatibility symbol
Ceiling mounted cassette type (Multi flow)	FCQ18PVJU	RZR18PVJU*	VJU
	FCQ24PVJU	RZR24PVJU*	
	FCQ30PVJU	RZR30PVJU*	
	FCQ36MVJU	RZR36PVJU*	
	FCQ42MVJU	RZR42PVJU*	
Ceiling suspended type	FHQ18PVJU	RZR18PVJU*	
	FHQ24PVJU	RZR24PVJU*	
	FHQ30PVJU	RZR30PVJU*	
	FHQ36MVJU	RZR36PVJU*	
	FHQ42MVJU	RZR42PVJU*	
Wall mounted type	FAQ18PVJU	RZR18PVJU*	
	FAQ24PVJU	RZR24PVJU*	

Note:

1. * : New model or changed model
2. Power supply intake : outdoor unit
3. VJ: 1 phase, 208/230V, 60Hz
   U(VJU, TJU): Standard Compatibility Symbol

2.1.2 Heat Pump

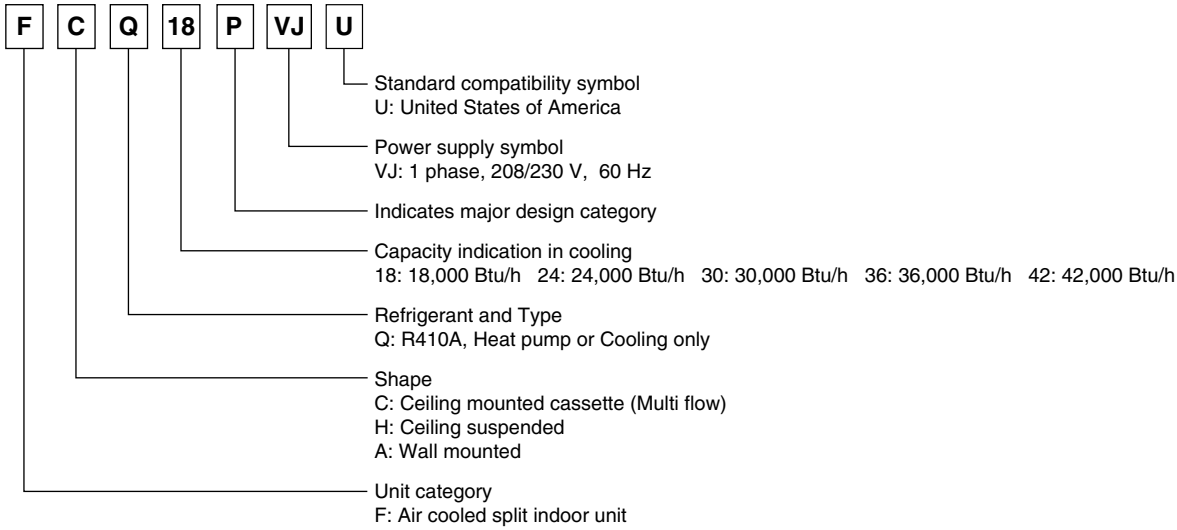
Indoor unit		Outdoor unit	Power supply, Compatibility symbol
Ceiling mounted cassette type (Multi flow)	FCQ18PVJU	RZQ18PVJU9	VJU
	FCQ24PVJU	RZQ24PVJU9	
	FCQ30PVJU	RZQ30PVJU	
	FCQ36MVJU	RZQ36PVJU9*	
	FCQ42MVJU	RZQ42PVJU9*	
Ceiling suspended type	FHQ18PVJU	RZQ18PVJU9	
	FHQ24PVJU	RZQ24PVJU9	
	FHQ30PVJU	RZQ30PVJU	
	FHQ36MVJU	RZQ36PVJU9*	
	FHQ42MVJU	RZQ42PVJU9*	
Wall mounted type	FAQ18PVJU	RZQ18PVJU9	
	FAQ24PVJU	RZQ24PVJU9	

Note:

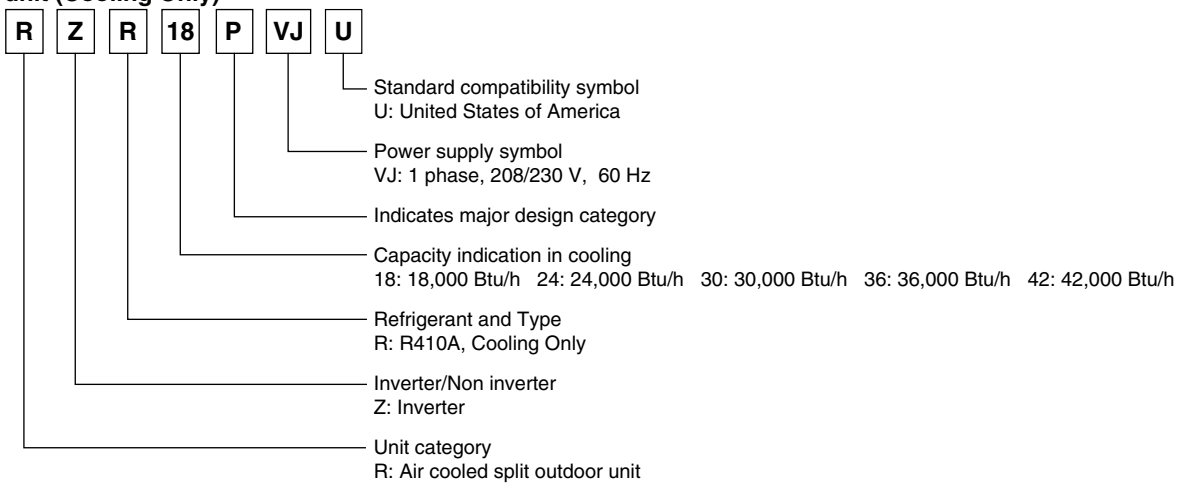
1. * : New model or changed model
2. Power supply intake : outdoor unit
3. VJ: 1 phase, 208/230V, 60Hz
   U(VJU, TJU): Standard Compatibility Symbol

2.2 Nomenclature

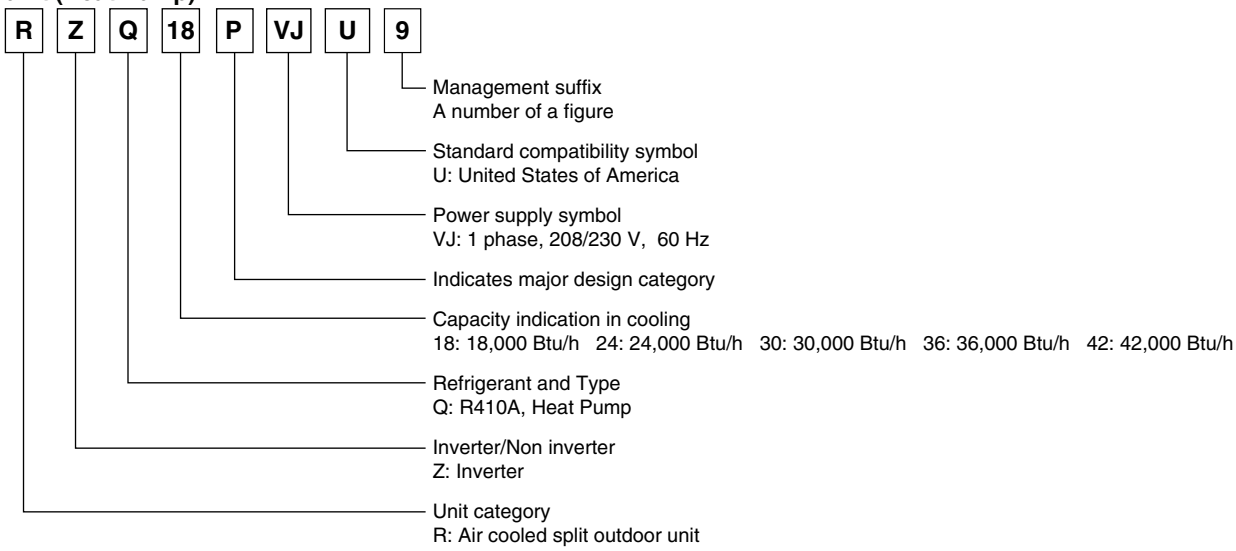
Indoor unit


F C Q 18 P VJ U
Standard compatibility symbol
U: United States of America
Power supply symbol
VJ: 1 phase, 208/230 V, 60 Hz
Indicates major design category
Capacity indication in cooling
18: 18,000 Btu/h 24: 24,000 Btu/h 30: 30,000 Btu/h 36: 36,000 Btu/h 42: 42,000 Btu/h
Refrigerant and Type
Q: R410A, Heat pump or Cooling only
Shape
C: Ceiling mounted cassette (Multi flow)
H: Ceiling suspended
A: Wall mounted
Unit category
F: Air cooled split indoor unit

Outdoor unit (Cooling Only)


R Z R 18 P VJ U
Standard compatibility symbol
U: United States of America
Power supply symbol
VJ: 1 phase, 208/230 V, 60 Hz
Indicates major design category
Capacity indication in cooling
18: 18,000 Btu/h 24: 24,000 Btu/h 30: 30,000 Btu/h 36: 36,000 Btu/h 42: 42,000 Btu/h
Refrigerant and Type
R: R410A, Cooling Only
Inverter/Non inverter
Z: Inverter
Unit category
R: Air cooled split outdoor unit

Outdoor unit (Heat Pump)


R Z Q 18 P VJ U 9
Management suffix
A number of a figure
Standard compatibility symbol
U: United States of America
Power supply symbol
VJ: 1 phase, 208/230 V, 60 Hz
Indicates major design category
Capacity indication in cooling
18: 18,000 Btu/h 24: 24,000 Btu/h 30: 30,000 Btu/h 36: 36,000 Btu/h 42: 42,000 Btu/h
Refrigerant and Type
Q: R410A, Heat Pump
Inverter/Non inverter
Z: Inverter
Unit category
R: Air cooled split outdoor unit

3. Specifications

3.1 Cooling Only

3.1.1 FCQ

Ceiling mounted cassette type (Multi flow)

Model	Indoor unit			FCQ18PVJU	FCQ24PVJU	FCQ30PVJU
	Outdoor unit			RZR18PVJU	RZR24PVJU	RZR30PVJU
Power supply				1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1]			Btu/h	18,000	24,000	30,000
Indoor unit				**FCQ18PVJU**	**FCQ24PVJU**	**FCQ30PVJU**
Dimensions	H×W×D		in. (mm)	11–3/8 × 33–1/8 × 33–1/8 (289 x 841 x 841)	11–3/8 × 33–1/8 × 33–1/8 (289 x 841 x 841)	11–3/8 × 33–1/8 × 33–1/8 (289 x 841 x 841)
Coil	Type			Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI			2 × 12 × 17	2 × 12 × 17	2 × 12 × 17
	Face area		ft² (m²)	5.35 (1.6)	5.35 (1.6)	5.35 (1.6)
Fan	Model			QTS45A17M	QTS45A17M	QTS45A17M
	Type			Turbo fan	Turbo fan	Turbo fan
	Motor output		W	90	90	90
	Airflow rate (H/L)		cfm	790/670	790/670	900/790
Air filter				—	—	—
Mass (Weight)			Lbs (kg)	73 (33)	73 (33)	73 (33)
Piping connections	Liquid		in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas		in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain		in. (mm)	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1 (25.4)	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1 (25.4)	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1 (25.4)
Remote controller (option)		Wired		BRC1E71	BRC1E71	BRC1E71
		Wireless		BRC7C812	BRC7C812	BRC7C812
Decoration panels (option)	Model			BYC125K–W19	BYC125K–W19	BYC125K–W19
	Color			White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
	Dimensions	H×W×D	in. (mm)	1–5/8 × 37–3/8 × 37–3/8 (41 x 949 x 949)	1–5/8 × 37–3/8 × 37–3/8 (41 x 949 x 949)	1–5/8 × 37–3/8 × 37–3/8 (41 x 949 x 949)
	Air filter			Resin net (with mold resistant)	Resin net (with mold resistant)	Resin net (with mold resistant)
	Weight		Lbs (kg)	11 (5)	11 (5)	11 (5)
Outdoor unit				**RZR18PVJU**	**RZR24PVJU**	**RZR30PVJU**
Color				Ivory	Ivory	Ivory
Dimensions	H×W×D		in. (mm)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)
Coil	Type			Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI			2 × 34 × 18	2 × 34 × 18	2 × 34 × 18
	Face area		ft² (m²)	7.1(2.2)	7.1(2.2)	7.1(2.2)
Comp.	Model			2YC63HXD#ED	2YC63HXD#ED	2YC63HXD#ED
	Type			Hermetically sealed swing type	Hermetically sealed swing type	Hermetically sealed swing type
	Motor output		kW	1.7	1.7	1.7
Fan	Model			P47N11F	P47N11F	P47N11F
	Type			Propeller fan	Propeller fan	Propeller fan
	Motor output		W	70	70	70
	Airflow rate		cfm	1,835	1,835	1,835
Mass (Weight)			Lbs (kg)	150 (68)	150 (68)	150 (68)
Piping connections	Liquid		in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas		in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain		in. (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)
Safety devices				High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step			%	35-100	30-100	25-100
Refrigerant control				Electronic expansion valve	Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length		ft (m)	25 (7.5)	25 (7.5)	25 (7.5)
	Max. length		ft (m)	164 (50)	164 (50)	164 (50)
	Max. height difference		ft (m)	98 (30)	98 (30)	98
Refrigerant	Model			R-410A	R-410A	R-410A
	Charge (factory charge)		Lbs (kg)	5.1 (2.3)	5.1 (2.3)	5.1 (2.3)
Ref. oil				Refer to the name plate of compressor.	Refer to the name plate of compressor.	Refer to the name plate of compressor.
Drawing Number				C: 4D071678	C: 4D071678	C: 4D071678

1. Indoor temp. : 80°FDB(27°CDB), 67°FWB(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

Ceiling mounted cassette type (Multi flow), continued

Model	Indoor unit			FCQ36MVJU	FCQ42MVJU
	Outdoor unit			RZR36PVJU	RZR42PVJU
Power supply				1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1]			Btu/h	36,000	40,500
Indoor unit				**FCQ36MVJU**	**FCQ42MVJU**
Dimensions	H×W×D		in. (mm)	11–3/8 × 33–1/8 × 33–1/8 (289 x 841 x 841)	11–3/8 × 33–1/8 × 33–1/8 (289 x 841 x 841)
Coil	Type			Cross fin coil	Cross fin coil
	Rows×Stages×FPI			2 × 12 × 17	2 × 12 × 17
	Face area		ft² (m²)	5.35 (1.6)	5.35 (1.6)
Fan	Model			QTS45A17M	QTS45A17M
	Type			Turbo fan	Turbo fan
	Motor output		W	90	90
	Airflow rate (H/L)		cfm	950/790	1,030/870
Air filter				—	—
Mass (Weight)			Lbs (kg)	74 (33.6)	74 (33.6)
Piping connections	Liquid		in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas		in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain		in. (mm)	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1 (25.4))	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1 (25.4))
Remote controller (option)		Wired		BRC1E71	BRC1E71
		Wireless		BRC7C812	BRC7C812
Decoration panels (option)	Model			BYC125K–W19	BYC125K–W19
	Color			White (10Y9/0.5)	White (10Y9/0.5)
	Dimensions	H×W×D	in. (mm)	1–5/8 × 37–3/8 × 37–3/8 (41 x 949 x 949)	1–5/8 × 37–3/8 × 37–3/8 (41 x 949 x 949)
	Air filter			Resin net (with mold resistant)	Resin net (with mold resistant)
	Weight		Lbs (kg)	11 (5)	11 (5)
Outdoor unit				**RZR36PVJU**	**RZR42PVJU**
Color				Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions	H×W×D		in. (mm)	52–15/16 × 35–7/16 × 12–5/8 (1345 x 900 x 321)	52–15/16 × 35–7/16 × 12–5/8 (1345 x 900 x 321)
Coil	Type			Cross fin coil	Cross fin coil
	Rows×Stages×FPI			2 × 60 × 13	2 × 60 × 13
	Face area		ft² (m²)	12.2	12.2
Comp.	Model			JT100G-VDLW@T	JT100G-VDLW@T
	Type			Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output		kW	2.5	3.0
Fan	Model			KFD–325–70–8C2	KFD–325–70–8C2
	Type			Propeller fan	Propeller fan
	Motor output		W	70 × 2	70 × 2
	Airflow rate		cfm	3,740	3,740
Mass (Weight)			Lbs (kg)	283 (128)	283 (128)
Piping connections	Liquid		in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas		in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain		in. (mm)	ϕ1 (25.4 (Hole)	ϕ1 (25.4 (Hole)
Safety devices				High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step			%	25-100	25-100
Refrigerant control				Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length		ft (m)	25 (7.5)	25 (7.5)
	Max. length		ft (m)	230 (70)	230 (70)
	Max. height difference		ft (m)	164 (50)	164 (50)
Refrigerant	Model			R-410A	R-410A
	Charge (factory charge)		Lbs (kg)	8.8 (4)	8.8 (4)
Ref. oil				Refer to the name plate of compressor.	Refer to the name plate of compressor.
Drawing Number				C: 4D071675	C: 4D071675

1. Indoor temp. : 80°FDB(27°CDB), 67°FWB(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

3.1.2 FHQ

Ceiling suspended type

Model	Indoor unit		FHQ18PVJU	FHQ24PVJU	FHQ30PVJU
	Outdoor unit		RZR18PVJU	RZR24PVJU	RZR30PVJU
Power supply			1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1]		Btu/h	18,000	24,000	30,000
Indoor unit			**FHQ18PVJU**	**FHQ24PVJU**	**FHQ30PVJU**
Color			White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
Dimensions	H×W×D	in. (mm)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)
Coil	Type		Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 12 × 15 + 2 × 10 × 15	2 × 12 × 15 + 2 × 10 × 15	2 × 12 × 15 + 2 × 10 × 15
	Face area	ft² (m²)	3.66 + 2.95 (1.1 x 0.9)	3.66 + 2.95 (1.1 x 0.9)	3.66 + 2.95 (1.1 x 0.9)
Fan	Model		—	—	—
	Type		Sirocco fan	Sirocco fan	Sirocco fan
	Motor output	W	130	130	130
	Airflow rate (H/L)	cfm	790/670	790/670	790/670
Air filter			Resin net (With mold resistant)	Resin net (With mold resistant)	Resin net (With mold resistant)
Mass (Weight)		Lbs (kg)	90 (41)	90 (41)	90 (41)
Piping connections	Liquid	in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in. (mm)	VP20 (External dia. 1, Internal dia. 3/4)	VP20 (External dia. 1, Internal dia. 3/4)	VP20 (External dia. 1, Internal dia. 3/4)
Remote controller (option)	Wired		BRC1E71	BRC1E71	BRC1E71
	Wireless		BRC7E83	BRC7E83	BRC7E83
Outdoor unit			**RZR18PVJU**	**RZR24PVJU**	**RZR30PVJU**
Color			Ivory	Ivory	Ivory
Dimensions	H×W×D	in. (mm)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)
Coil	Type		Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 34 × 18	2 × 34 × 18	2 × 34 × 18
	Face area	ft² (m²)	7.1 (2.2)	7.1 (2.2)	7.1 (2.2)
Comp.	Model		2YC63HXD#ED	2YC63HXD#ED	2YC63HXD#ED
	Type		Hermetically sealed swing type	Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.7	1.7	1.7
Fan	Model		P47N11F	P47N11F	P47N11F
	Type		Propeller fan	Propeller fan	Propeller fan
	Motor output	W	70	70	70
	Airflow rate	cfm	1,835	1,835	1,835
Mass (Weight)		Lbs (kg)	150 (68)	150 (68)	150 (68)
Piping connections	Liquid	in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in. (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4)(Hole)	ϕ1 (25.4) (Hole)
Safety devices			High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step		%	35-100	30-100	25-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	Lbs (kg)	25 (11)	25 (11)	25 (11)
	Max. length	ft (m)	164 (50)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A	R-410A
	Charge (factory charge)	Lbs (kg)	5.1 (2.3)	5.1 (2.3)	5.1 (2.3)
Ref. oil			Refer to the name plate of compressor.	Refer to the name plate of compressor.	Refer to the name plate of compressor.
Drawing Number			C: 4D071679	C: 4D071679	C: 4D071679

1. Indoor temp. : 80°FDB(27°CDB), 67°FWB(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

Ceiling suspended type, continued

Model	Indoor unit		FHQ36MVJU	FHQ42MVJU
	Outdoor unit		RZR36PVJU	RZR42PVJU
Power supply			1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1]		Btu/h	36,000	40,500
Indoor unit			**FHQ36MVJU**	**FHQ42MVJU**
Color			White (10Y9/0.5)	White (10Y9/0.5)
Dimensions	H×W×D	in. (mm)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 12 × 15 + 2 × 10 × 15	2 × 12 × 15 + 2 × 10 × 15
	Face area	ft² (m²)	3.66 + 2.95 (1.1 + 0.9)	3.66 + 2.95 (1.1 + 0.9)
Fan	Model		—	—
	Type		Sirocco fan	Sirocco fan
	Motor output	W	130	130
	Airflow rate (H/L)	cfm	830/670	850/700
Air filter			Resin net (With mold resistant)	Resin net (With mold resistant)
Mass (Weight)		Lbs (kg)	90 (41)	90 (41)
Piping connections	Liquid	in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in. (mm)	VP20 (External dia. 1 (25.4) , Internal dia. 3/4 (19.1))	VP20 (External dia. 1 (25.4), Internal dia. 3/4 (19.1)
Remote controller (option)	Wired		BRC1E71	BRC1E71
	Wireless		BRC7E83	BRC7E83
Outdoor unit			**RZR36PVJU**	**RZR42PVJU**
Color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions	H×W×D	in. (mm)	52–15/16 × 35–7/16 × 12–5/8 (1344 x 900 x 321)	52–15/16 × 35–7/16 × 12–5/8 (1344 x 900 x 321)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 13	2 × 60 × 13
	Face area	ft² (m²)	12.2 (3.7)	12.2 (3.7)
Comp.	Model		JT100G-VDLW@T	JT100G-VDLW@T
	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output	kW	2.5	3.0
Fan	Model		KFD–325–70–8C2	KFD–325–70–8C2
	Type		Propeller Fan	Propeller Fan
	Motor output	W	70×2	70×2
	Airflow rate	cfm	3,740	3,740
Mass (Weight)		Lbs (kg)	283 (128)	283 (128)
Piping connections	Liquid	in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in. (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)
Safety devices			High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step		%	25-100	25-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.5)	25 (7.5)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	164 (50)	164 (50)
Refrigerant	Model		R-410A	R-410A
	Charge (factory charge)	Lbs (kg)	8.8 (4)	8.8 (4)
Ref. oil			Refer to the name plate of compressor.	Refer to the name plate of compressor.
Drawing Number			C: 4D071676	C: 4D071676

1. Indoor temp. : 80°FDB(27°CDB), 67°FWB(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

3.1.3 FAQ

Wall mounted type

Model	Indoor unit		FAQ18PVJU	FAQ24PVJU
	Outdoor unit		RZR18PVJU	RZR24PVJU
Power supply			1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1]		Btu/h	18,000	24,000
Indoor unit			**FAQ18PVJU**	**FAQ24PVJU**
Color			White (3.0Y8.5/0.5)	White (3.0Y8.5/0.5)
Dimensions	H×W×D	in. (mm)	11–3/8 × 41–3/8 × 9 (289 x 1051 x 229)	11–3/8 × 41–3/8 × 9 (289 x 1051 x 229)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 14 × 18	2 × 14 × 18
	Face area	ft² (m²)	2.29 (0.7)	2.29 (0.7)
Fan	Model		QCL9686M	QCL9686M
	Type		Cross flow fan	Cross flow fan
	Motor output	W	43	43
	Airflow rate (H/L)	cfm	500/400	635/470
Air filter			Resin net (Washable)	Resin net (Washable)
Mass (Weight)		Lbs (kg)	31 (14)	31 (14)
Piping connections	Liquid	in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in. (mm)	VP13 (External dia. 11/16 (17.5), Internal dia. 1/2 (12.7))	VP13 (External dia. 11/16 (12.7), Internal dia. 1/2 (12.7))
Remote controller (option)	Wired		BRC1E71	BRC1E71
	Wireless		BRC7E818	BRC7E818
Outdoor unit			**RZR18PVJU**	**RZR24PVJU**
Color			Ivory	Ivory
Dimensions	H×W×D	in. (mm)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 34 × 18	2 × 34 × 18
	Face area	ft² (m²)	7.1 (2.2)	7.1 (2.2)
Comp.	Model		2YC63HXD#ED	2YC63HXD#ED
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.7	1.7
Fan	Model		P47N11F	P47N11F
	Type		Propeller fan	Propeller fan
	Motor output	W	70	70
	Airflow rate	cfm	1,835	1,835
Mass (Weight)		Lbs (kg)	150 (68)	150 (68)
Piping connections	Liquid	in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in. (mm)	ϕ1 (Hole)	ϕ1 (Hole)
Safety devices			High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step		%	35-100	30-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.5)	25 (7.5)
	Max. length	ft (m)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge (factory charge)	Lbs (kg)	5.1 (2.3)	5.1 (2.3)
Ref. oil			Refer to the name plate of compressor.	Refer to the name plate of compressor.
Drawing Number			C: 4D071677	C: 4D071677

1. Indoor temp. : 80°FDB(27°CDB), 67°FWB(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

3.2 Heat Pump

3.2.1 FCQ

Ceiling mounted cassette type (Multi flow)

Model	Indoor unit			FCQ18PVJU	FCQ24PVJU	FCQ30PVJU
	Outdoor unit			RZQ18PVJU9	RZQ24PVJU9	RZQ30PVJU
Power supply				1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1]			Btu/h	18,000	24,000	30,000
Heating capacity [2]			Btu/h	20,000	27,000	34,000
Indoor unit				**FCQ18PVJU**	**FCQ24PVJU**	**FCQ30PVJU**
Dimensions	H×W×D		in. (mm)	11–3/8 × 33–1/8 × 33–1/8 (289 x 841 x 841)	11–3/8 × 33–1/8 × 33–1/8 (289 x 841 x 841)	11–3/8 × 33–1/8 × 33–1/8 (289 x 841 x 841)
Coil	Type			Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI			2 × 12 × 17	2 × 12 × 17	2 × 12 × 17
	Face area		ft² (m²)	5.35	5.35	5.35
Fan	Model			QTS45A17M	QTS45A17M	QTS45A17M
	Type			Turbo fan	Turbo fan	Turbo fan
	Motor output		W	90	90	90
	Airflow rate (H/L)		cfm	(Cooling) 790/670 (Heating) 870/670	(Cooling) 790/670 (Heating) 870/670	900/790
Air filter				—	—	—
Mass (Weight)			Lbs (kg)	73 (33)	73 (33)	73 (33)
Piping connections	Liquid		in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas		in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain		in. (mm)	VP25 (External dia. 1–1/4, Internal dia. 1)	VP25 (External dia. 1–1/4, Internal dia. 1)	VP25 (External dia. 1–1/4, Internal dia. 1)
Remote controller (option)		Wired		BRC1E71	BRC1E71	BRC1E71
		Wireless		BRC7C812	BRC7C812	BRC7C812
Decoration panels (option)	Model			BYC125K–W19	BYC125K–W19	BYC125K–W19
	Color			White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
	Dimensions	H×W×D	in. (mm)	1–5/8 × 37–3/8 × 37–3/8 (41 x 949 x 949)	1–5/8 × 37–3/8 × 37–3/8 (41 x 949 x 949)	1–5/8 × 37–3/8 × 37–3/8 (41 x 949 x 949)
	Air filter			Resin net (with mold resistant)	Resin net (with mold resistant)	Resin net (with mold resistant)
	Weight		Lbs (kg)	11 (5)	11 (5)	11 (5)
Outdoor unit				**RZQ18PVJU9**	**RZQ24PVJU9**	**RZQ30PVJU**
Color				Ivory	Ivory	Ivory
Dimensions	H×W×D		in. (mm)	30–5/16 × 35–7/16 × 12–5/8	30–5/16 × 35–7/16 × 12–5/8	30–5/16 × 35–7/16 × 12–5/8
Coil	Type			Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI			2 × 34 × 18	2 × 34 × 18	2 × 34 × 18
	Face area		ft² (m²)	7.1 (2.2)	7.1 (2.2)	7.1 (2.2)
Comp.	Model			2YC63HXD#ED	2YC63HXD#ED	2YC63HXD#ED
	Type			Hermetically sealed swing type	Hermetically sealed swing type	Hermetically sealed swing type
	Motor output		kW	1.7	1.7	1.7
Fan	Model			P47N11F	P47N11F	P47N11F
	Type			Propeller fan	Propeller fan	Propeller fan
	Motor output		W	70	70	70
	Airflow rate		cfm	1,835	1,835	1,835
Mass (Weight)			Lbs (kg)	150 (68)	150 (68)	150 (68)
Piping connections	Liquid		in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas		in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain		in. (mm)	ϕ1 (Hole)	ϕ1 (Hole)	ϕ1 (Hole)
Safety devices				High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overloadprotector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step			%	35-100	30-100	25-100
Refrigerant control				Electronic expansion valve	Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length		ft (m)	25 (7.5)	25 (7.5)	25 (7.5)
	Max. length		ft (m)	164 (50)	164 (50)	164 (50)
	Max. height difference		ft (m)	98 (30)	98 (30)	98 (30)
Refrigerant	Model			R-410A	R-410A	R-410A
	Charge (factory charge)		Lbs (kg)	5.1 (2.3)	5.1 (2.3)	5.1 (2.3)
Ref. oil				Refer to the name plate of compressor.	Refer to the name plate of compressor.	Refer to the name plate of compressor.
Drawing Number				C: 4D063924F	C: 4D063924F	C: 4D063924F

1. Indoor temp. : 80°FDB(27°CDB), 67°FWB(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Indoor temp. : 70°FDB(21°CDB) / outdoor temp. : 47°FDB (8.3 CDB) , 43°FWB(6°CWB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
3. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

Ceiling mounted cassette type (Multi flow), continued

Model	Indoor unit			FCQ36MVJU	FCQ42MVJU
	Outdoor unit			RZQ36PVJU9	RZQ42PVJU9
Power supply				1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1]			Btu/h	36,000	40,500
Heating capacity [2]			Btu/h	39,500	41,500
Indoor unit				**FCQ36MVJU**	**FCQ36MVJU**
Dimensions	H×W×D		in. (mm)	11–3/8 × 33–1/8 × 33–1/8 (289 x 841 x 841)	11–3/8 × 33–1/8 × 33–1/8 (289 x 841 x 841)
Coil	Type			Cross fin coil	Cross fin coil
	Rows×Stages×FPI			2 × 12 × 17	2 × 12 × 17
	Face area		ft² (m²)	5.35 (1.6)	5.35 (1.6)
Fan	Model			QTS45A17M	QTS45A17M
	Type			Turbo fan	Turbo fan
	Motor output		W	90	90
	Airflow rate (H/L)		cfm	950/790	1,030/870
Air filter				—	—
Mass (Weight)			Lbs (kg)	74 (33.6)	74 (33.6)
Piping connections	Liquid		in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas		in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain		in. (mm)	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1 (25.4))	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1 (25.4))
Remote controller (option)		Wired		BRC1E71	BRC1E71
		Wireless		BRC7C812	BRC7C812
Decoration panels (option)	Model			BYC125K–W19	BYC125K–W19
	Color			White (10Y9/0.5)	White (10Y9/0.5)
	Dimensions	H×W×D	in. (mm)	1–5/8 × 37–3/8 × 37–3/8 (41 x 949 x 949)	1–5/8 × 37–3/8 × 37–3/8 (41 x 949 x 949)
	Air filter			Resin net (with mold resistant)	Resin net (with mold resistant)
	Weight		Lbs (kg)	11 (5)	11 (5)
Outdoor unit				**RZQ36PVJU9**	**RZQ42PVJU9**
Color				Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions	H×W×D		in. (mm)	52–15/16 × 35–7/16 × 12–5/8 (1345 x 900 x 321)	52–15/16 × 35–7/16 × 12–5/8 (1345 x 900 x 321)
Coil	Type			Cross fin coil	Cross fin coil
	Rows×Stages×FPI			2 × 60 × 13	2 × 60 × 13
	Face area		ft² (m²)	12.2 (3.7)	12.2 (3.7)
Comp.	Model			JT100G-VDLW@T	JT100G-VDLW@T
	Type			Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output		kW	2.5	3.0
Fan	Model			KFD–325–70–8C2	KFD–325–70–8C2
	Type			Propeller fan	Propeller fan
	Motor output		W	70 × 2	70 × 2
	Airflow rate		cfm	3,740	3,740
Mass (Weight)			Lbs (kg)	283 (128)	283 (128)
Piping connections	Liquid		in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas		in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain		in. (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)
Safety devices				High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step			%	25-100	25-100
Refrigerant control				Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length		ft (m)	25 (7.5)	25 (7.5)
	Max. length		ft (m)	230 (70)	230 (70)
	Max. height difference		ft (m)	164 (50)	164 (50)
Refrigerant	Model			R-410A	R-410A
	Charge (factory charge)		Lbs (kg)	8.8 (4)	8.8 (4)
Ref. oil				Refer to the name plate of compressor.	Refer to the name plate of compressor.
Drawing Number				C: 4D071673	C: 4D071673

1. Indoor temp. : 80°FDB(27°CDB), 67°FWB(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Indoor temp. : 70°FDB(21°CDB) / outdoor temp. : 47°FDB (8.3 CDB) , 43°FWB(6°CWB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
3. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

3.2.2 FHQ

Ceiling suspended type

Model	Indoor unit		FHQ18PVJU	FHQ24PVJU	FHQ30PVJU
	Outdoor unit		RZQ18PVJU9	RZQ24PVJU9	RZQ30PVJU
Power supply			1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1]		Btu/h	18,000	24,000	30,000
Heating capacity [2]		Btu/h	20,000	27,000	34,000
Indoor unit			**FHQ18PVJU**	**FHQ24PVJU**	**FHQ30PVJU**
Color			White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
Dimensions	H×W×D	in. (mm)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)
Coil	Type		Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 12 × 15 + 2 × 10 × 15	2 × 12 × 15 + 2 × 10 × 15	2 × 12 × 15 + 2 × 10 × 15
	Face area	ft² (m²)	3.66 + 2.95 (1.11 + 0.9)	3.66 + 2.95 (1.11 + 0.9)	3.66 + 2.95 (1.11 + 0.9)
Fan	Model		—	—	—
	Type		Sirocco fan	Sirocco fan	Sirocco fan
	Motor output	W	130	130	130
	Airflow rate (H/L)	cfm	790/670	790/670	790/670
Air filter			Resin net (With mold resistant)	Resin net (With mold resistant)	Resin net (With mold resistant)
Mass (Weight)		Lbs (kg)	90 (41)	90 (41)	90 (41)
Piping connections	Liquid	in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in. (mm)	VP20 (External dia. 1 (25.4), Internal dia. 3/4 (19.1))	VP20 (External dia. 1 (25.4), Internal dia. 3/4 (19.1))	VP20 (External dia. 1 (25.4), Internal dia. 3/4 (19.1))
Remote controller (option)	Wired		BRC1E71	BRC1E71	BRC1E71
	Wireless		BRC7E83	BRC7E83	BRC7E83
Outdoor unit			**RZQ18PVJU9**	**RZQ24PVJU9**	**RZQ30PVJU**
Color			Ivory	Ivory	Ivory
Dimensions	H×W×D	in. (mm)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)
Coil	Type		Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 34 × 18	2 × 34 × 18	2 × 34 × 18
	Face area	ft² (m²)	7.1 (2.2)	7.1 (2.2)	7.1 (2.2)
Comp.	Model		2YC63HXD#ED	2YC63HXD#ED	2YC63HXD#ED
	Type		Hermetically sealed swing type	Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.7	1.7	1.7
Fan	Model		P47N11F	P47N11F	P47N11F
	Type		Propeller fan	Propeller fan	Propeller fan
	Motor output	W	70	70	70
	Airflow rate	cfm	1,835	1,835	1,835
Mass (Weight)		Lbs (kg)	150 (68)	150 (68)	150 (68)
Piping connections	Liquid	in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in. (mm)	ϕ1(25.4) (Hole)	ϕ1(25.4) (Hole)	ϕ1(25.4) (Hole)
Safety devices			High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step		%	35-100	30-100	25-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.5)	25 (7.5)	25 (7.5)
	Max. length	ft (m)	164 (50)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A	R-410A
	Charge (factory charge)	Lbs (kg)	5.1 (2.3)	5.1 (2.3)	5.1 (2.3)
Ref. oil			Refer to the name plate of compressor.	Refer to the name plate of compressor.	Refer to the name plate of compressor.
Drawing Number			C: 4D063925E	C: 4D063925E	C: 4D063925E

1. Indoor temp. : 80°FDB(27°CDB), 67°FWB(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Indoor temp. : 70°FDB(21°CDB) / outdoor temp. : 47°FDB (8.3 CDB) , 43°FWB(6°CWB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
3. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

Ceiling suspended type, continued

Model	Indoor unit		FHQ36MVJU	FHQ42MVJU
	Outdoor unit		RZQ36PVJU9	RZQ42PVJU9
Power supply			1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1]		Btu/h	36,000	40,500
Heating capacity [2]		Btu/h	37,500	39,500
Indoor unit			**FHQ36MVJU**	**FHQ42MVJU**
Color			White (10Y9/0.5)	White (10Y9/0.5)
Dimensions	H×W×D	in. (mm)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 12 × 15 + 2 × 10 × 15	2 × 12 × 15 + 2 × 10 × 15
	Face area	ft² (m²)	3.66 + 2.95 (1.1 +0.9)	3.66 + 2.95 (1.1 +0.9)
Fan	Model		—	—
	Type		Sirocco fan	Sirocco fan
	Motor output	W	130	130
	Airflow rate (H/L)	cfm	830/670	850/700
Air filter			Resin net (With mold resistant)	Resin net (With mold resistant)
Mass (Weight)		Lbs (kg)	90 (40.8)	90 (40.8)
Piping connections	Liquid	in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in. (mm)	VP20 (External dia. 1 (25.4), Internal dia. 3/4 (19.1)	VP20 (External dia. 1 (25.4), Internal dia. 3/4 (19.1))
Remote controller (option)	Wired		BRC1E71	BRC1E71
	Wireless		BRC7E83	BRC7E83
Outdoor unit			**RZQ36PVJU9**	**RZQ42PVJU9**
Color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions	H×W×D	in. (mm)	52–15/16 × 35–7/16 × 12–5/8 (1345 x 900 x 321)	52–15/16 × 35–7/16 × 12–5/8 (1345 x 900 x 321)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 13	2 × 60 × 13
	Face area	ft² (m²)	12.2 (3.7)	12.2 (3.7)
Comp.	Model		JT100G-VDLW@T	JT100G-VDLW@T
	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output	kW	2.5	3.0
Fan	Model		KFD–325–70–8C2	KFD–325–70–8C2
	Type		Propeller Fan	Propeller Fan
	Motor output	W	70×2	70×2
	Airflow rate	cfm	3,740	3,740
Mass (Weight)		Lbs (kg)	283 (128)	283 (128)
Piping connections	Liquid	in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in. (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)
Safety devices			High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step		%	25-100	25-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.5)	25 (7.5)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	164 (50)	164 (50)
Refrigerant	Model		R-410A	R-410A
	Charge (factory charge)	Lbs (kg)	8.8 (4)	8.8 (4)
Ref. oil			Refer to the name plate of compressor.	Refer to the name plate of compressor.
Drawing Number			C: 4D071674	C: 4D071674

1. Indoor temp. : 80°FDB(27°CDB), 67°FWB(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Indoor temp. : 70°FDB(21°CDB) / outdoor temp. : 47°FDB (8.3 CDB) , 43°FWB(6°CWB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
3. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

3.2.3 FAQ

Wall mounted type

Model	Indoor unit			FAQ18PVJU	FAQ24PVJU
	Outdoor unit			RZQ18PVJU9	RZQ24PVJU9
Power supply				1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1]			Btu/h	18,000	24,000
Heating capacity [2]			Btu/h	20,000	26,000
Indoor unit				**FAQ18PVJU**	**FAQ24PVJU**
Color				White (3.0Y8.5/0.5)	White (3.0Y8.5/0.5)
Dimensions	H×W×D		in. (mm)	11–3/8 × 41–3/8 × 9 (289 x 1051 x 228)	11–3/8 × 41–3/8 × 9 (289 x 1051 x 228)
Coil	Type			Cross fin coil	Cross fin coil
	Rows×Stages×FPI			2 × 14 × 18	2 × 14 × 18
	Face area		ft² (m²)	2.29 (0.7)	2.29 (0.7)
Fan	Model			QCL9686M	QCL9686M
	Type			Cross flow fan	Cross flow fan
	Motor output		W	43	43
	Airflow rate (H/L)		cfm	500/400	635/470
Air filter				Resin net (Washable)	Resin net (Washable)
Mass (Weight)			Lbs (kg)	31 (14)	31 (14)
Piping connections	Liquid		in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas		in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain		in. (mm)	VP13 (External dia. 11/16 (17.5), Internal dia. 1/2 (12.7))	VP13 (External dia. 11/16 (17.5), Internal dia. 1/2 (12.7))
Remote controller (option)		Wired		BRC1E71	BRC1E71
		Wireless		BRC7E818	BRC7E818
Outdoor unit				**RZQ18PVJU9**	**RZQ24PVJU9**
Color				Ivory	Ivory
Dimensions	H×W×D		in. (mm)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)
Coil	Type			Cross fin coil	Cross fin coil
	Rows×Stages×FPI			2 × 34 × 18	2 × 34 × 18
	Face area		ft² (m²)	7.1 (2.2)	7.1 (2.2)
Comp.	Model			2YC63HXD#ED	2YC63HXD#ED
	Type			Hermetically sealed swing type	Hermetically sealed swing type
	Motor output		kW	1.7	1.7
Fan	Model			P47N11F	P47N11F
	Type			Propeller fan	Propeller fan
	Motor output		W	70	70
	Airflow rate		cfm	1,835	1,835
Mass (Weight)			Lbs (kg)	150 (68)	150 (68)
Piping connections	Liquid		in. (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas		in. (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain		in. (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4)(Hole)
Safety devices				High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step			%	35-100	30-100
Refrigerant control				Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length		ft (m)	25 (7.5)	25 (7.5)
	Max. length		ft (m)	164(50)	164(50)
	Max. height difference		ft (m)	98 (30)	98 (30)
Refrigerant	Model			R-410A	R-410A
	Charge (factory charge)		Lbs (kg)	5.1 (2.3)	5.1 (2.3)
Ref. oil				Refer to the name plate of compressor.	Refer to the name plate of compressor.
Drawing Number				C: 4D062151F	C: 4D062151F

1. Indoor temp. : 80°FDB(27°CDB), 67°FWB(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Indoor temp. : 70°FDB(21°CDB) / outdoor temp. : 47°FDB (8.3 CDB) , 43°FWB(6°CWB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
3. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

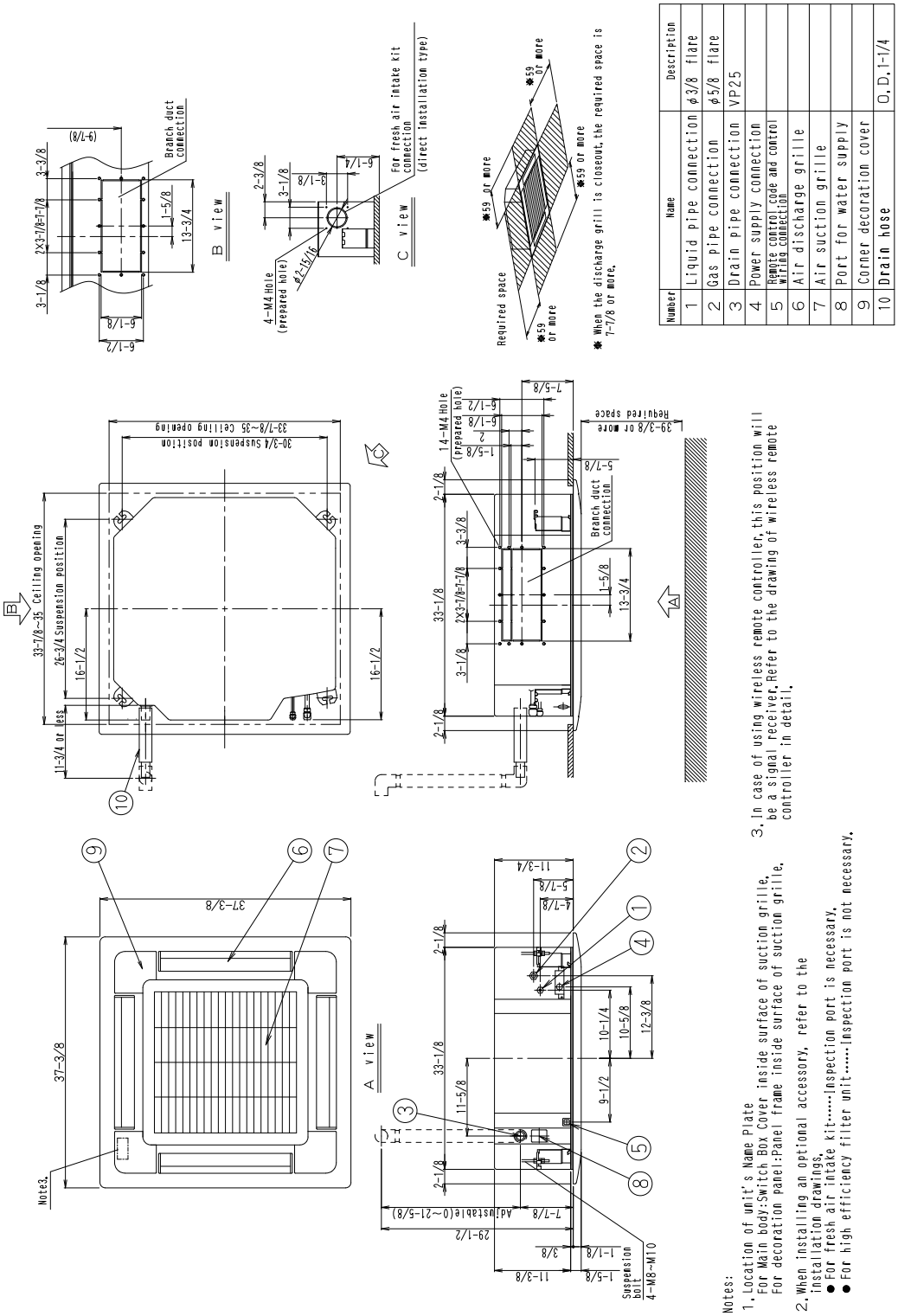
4. Dimensions and service space

4.1 Indoor unit

4.1.1 FCQ (Ceiling mounted cassette type)

FCQ18PVJU / FCQ24PVJU / FCQ30PVJU
FCQ36MVJU / FCQ42MVJU

Unit (in.)



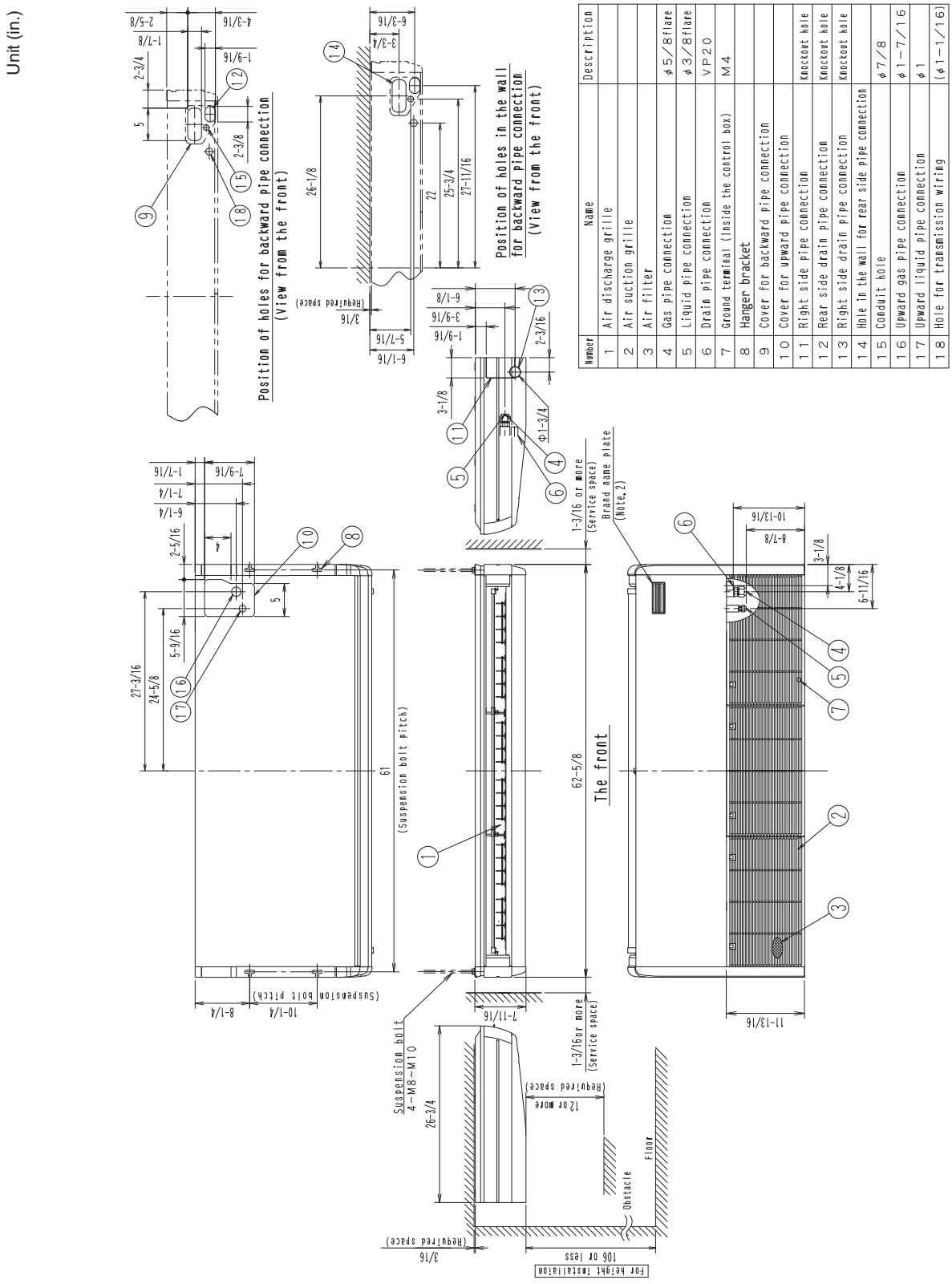
Number	Name	Description
1	Liquid pipe connection	ϕ3/8 flare
2	Gas pipe connection	ϕ5/8 flare
3	Drain pipe connection	VP25
4	Power supply connection	
5	Remote control code and control wiring connection	
6	Air discharge grille	
7	Air suction grille	
8	Port for water supply	
9	Corner decoration cover	
10	Drain hose	O.D.1-1/4

Notes:
1. Location of unit's Name Plate
For Main body:Switch Box Cover inside surface of suction grille,
For decoration panel:Panel frame inside surface of suction grille.
2. When installing an optional accessory, refer to the installation drawings.
● For fresh air intake kit·····Inspection port is necessary.
● For high efficiency filter unit·····Inspection port is not necessary.
3. In case of using wireless remote controller, this position will be a signal receiver. Refer to the drawing of wireless remote controller in detail.

3D042633B

4.1.2 FHQ (Ceiling suspended type)

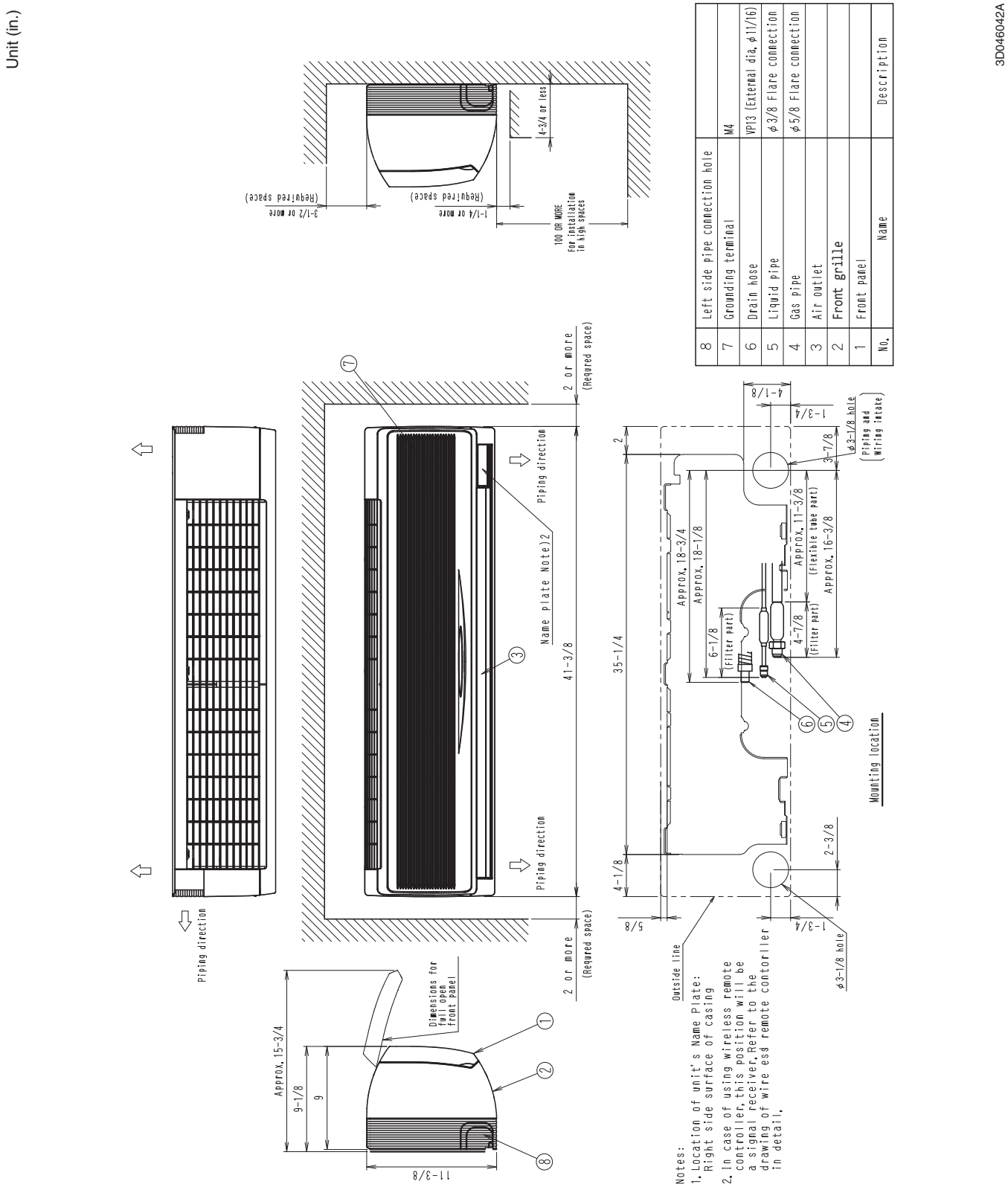
FHQ18PVJU / FHQ24PVJU / FHQ30PVJU
FHQ36MVJU / FHQ42MVJU


Unit (in.)
Position of holes for backward pipe connection (View from the front)
Position of holes in the wall for backward pipe connection (View from the front)
The front
Suspension bolt 4-M8~M10
(Suspension bolt pitch)
(Required space)
Floor
Obstacle
For height installation
106 or less
12 or more
1-3/16 or more (Service space)
Brand name plate (Note.2)

Number	Name	Description
1	Air discharge grille	
2	Air suction grille	
3	Air filter	
4	Gas pipe connection	φ5/8flare
5	Liquid pipe connection	φ3/8flare
6	Drain pipe connection	VP20
7	Ground terminal (Inside the control box)	M4
8	Hanger bracket	
9	Cover for backward pipe connection	
10	Cover for upward pipe connection	
11	Right side pipe connection	Knockout hole
12	Rear side drain pipe connection	Knockout hole
13	Right side drain pipe connection	Knockout hole
14	Hole in the wall for rear side pipe connection	
15	Conduit hole	φ7/8
16	Upward gas pipe connection	φ1-7/16
17	Upward liquid pipe connection	φ1
18	Hole for transmission wiring	(φ1-1/16)

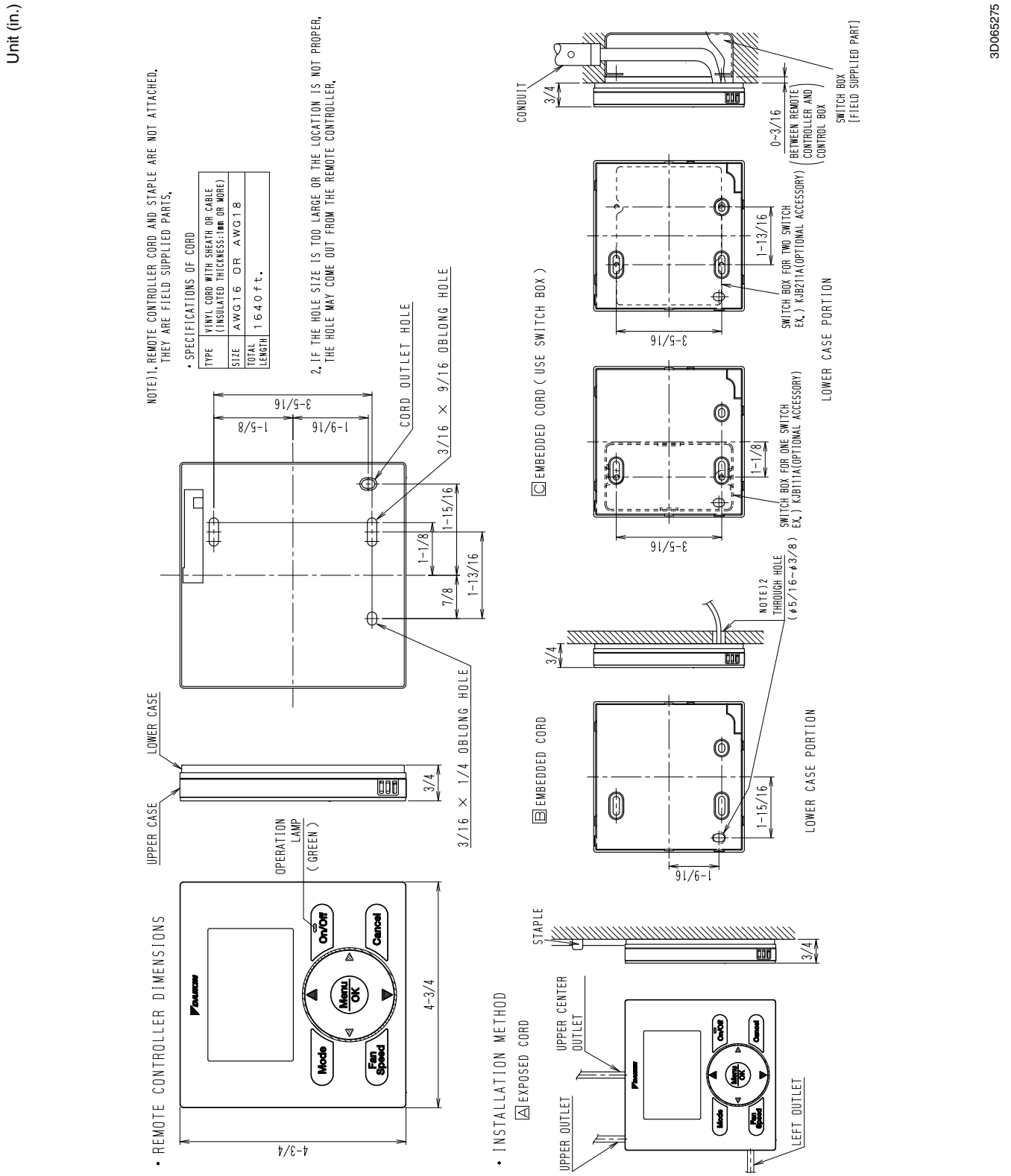
4.1.3 FAQ (Wall mounted type)

FAQ18PVJU / FAQ24PVJU



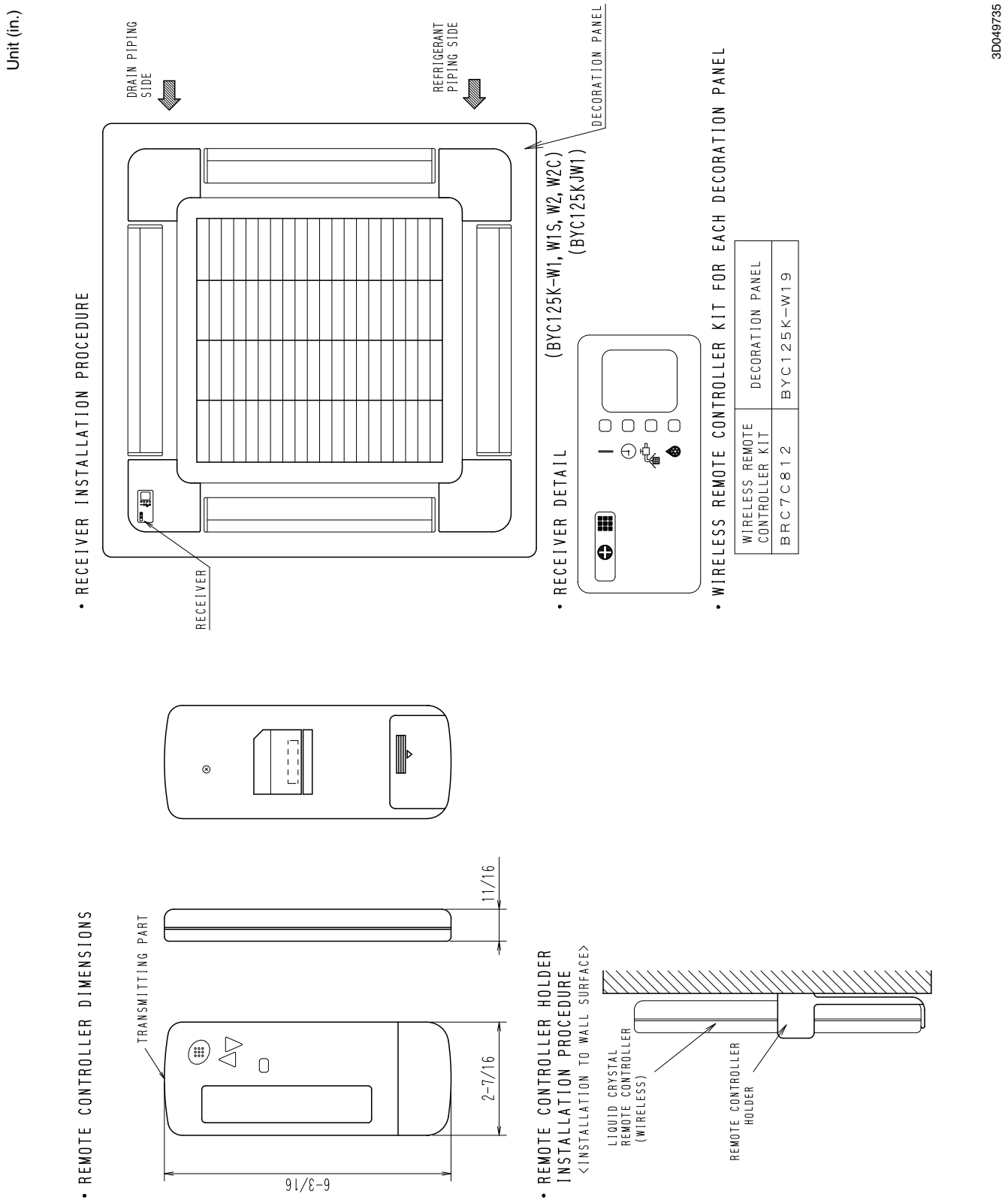
4.2 Wired remote controller (Optional)

BRC1E71

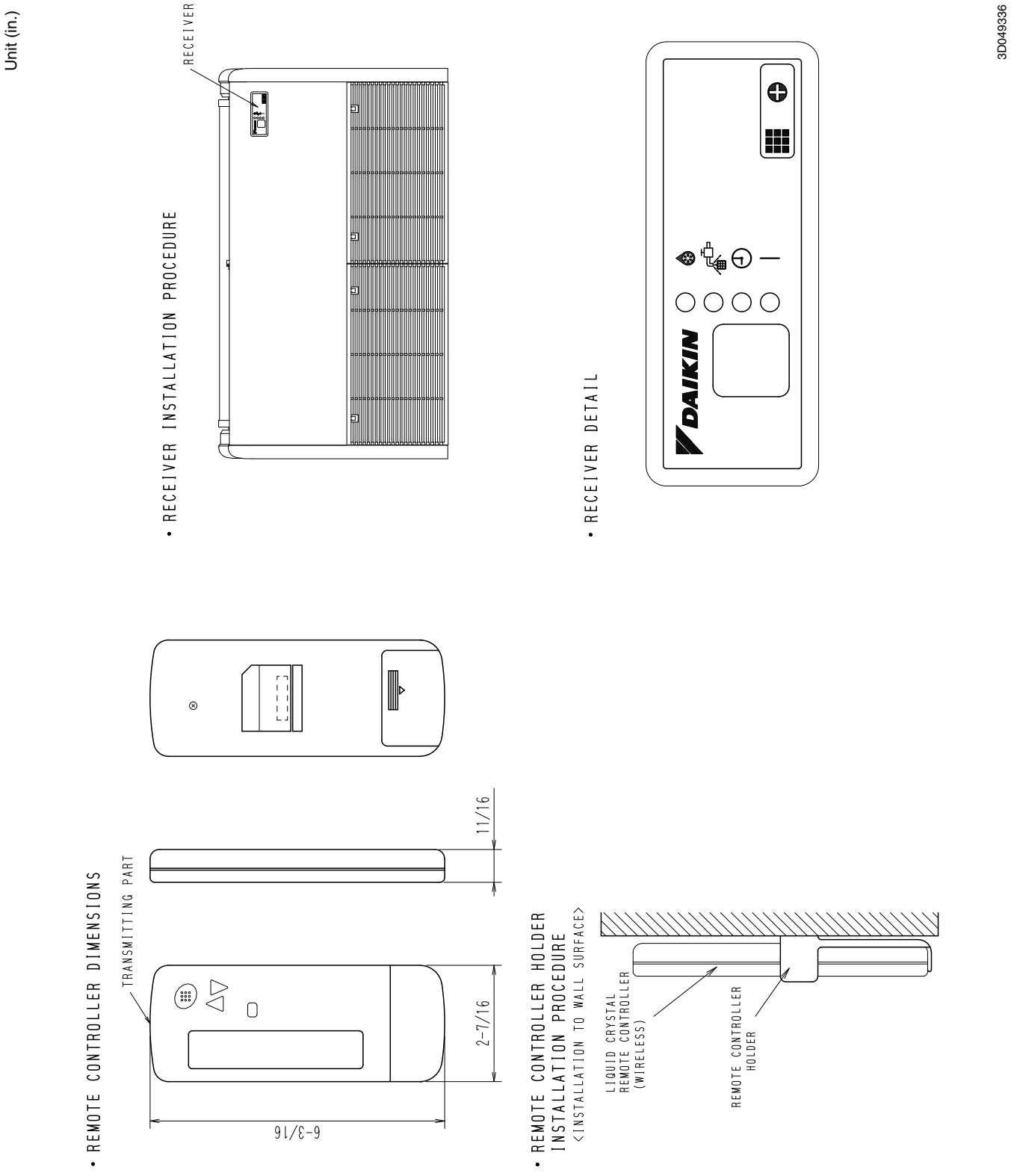


4.3 Wireless remote controller (Optional)

BRC7C812 (for FCQ)



BRC7E83 (for FHQ)

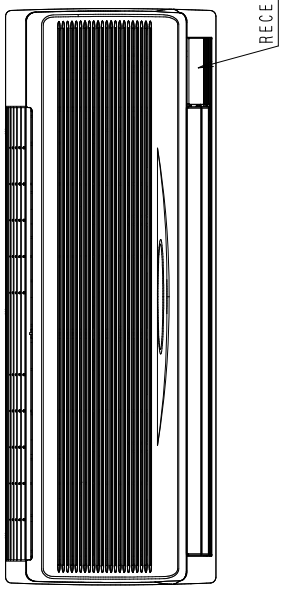


BRC7E818 (for FAQ)

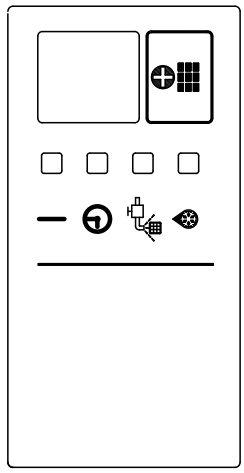
Unit (in.)

3D049736

• RECEIVER INSTALLATION PROCEDURE



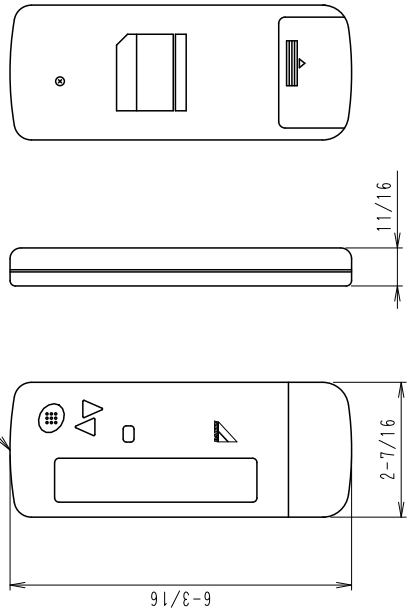
• RECEIVER DETAIL



• WIRELESS REMOTE CONTROLLER KIT

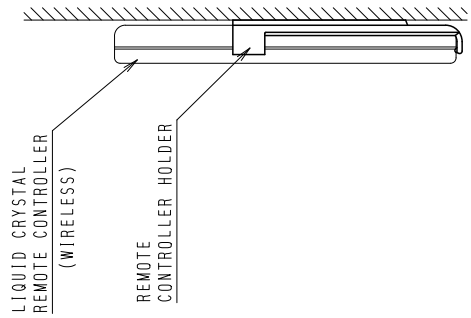
WIRELESS REMOTE CONTROLLER KIT	INDOOR UNIT
BRC7E818	FAQ—PVJU

• REMOTE CONTROLLER DIMENSIONS



• REMOTE CONTROLLER HOLDER INSTALLATION PROCEDURE

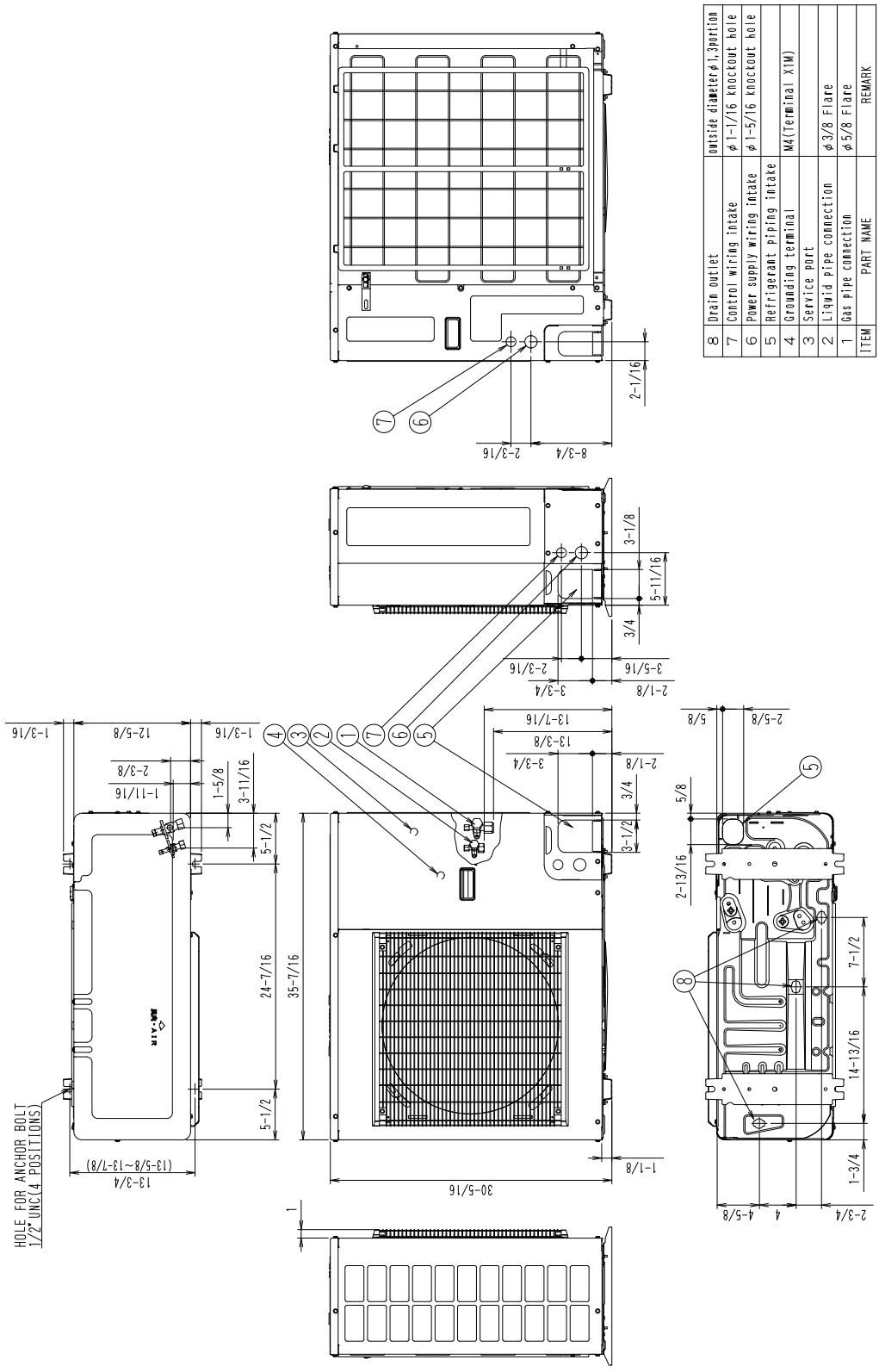
< INSTALLATION TO WALL SURFACE >



4.4 Outdoor unit

RZR18PVJU / RZR24PVJU / RZR30PVJU
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU9

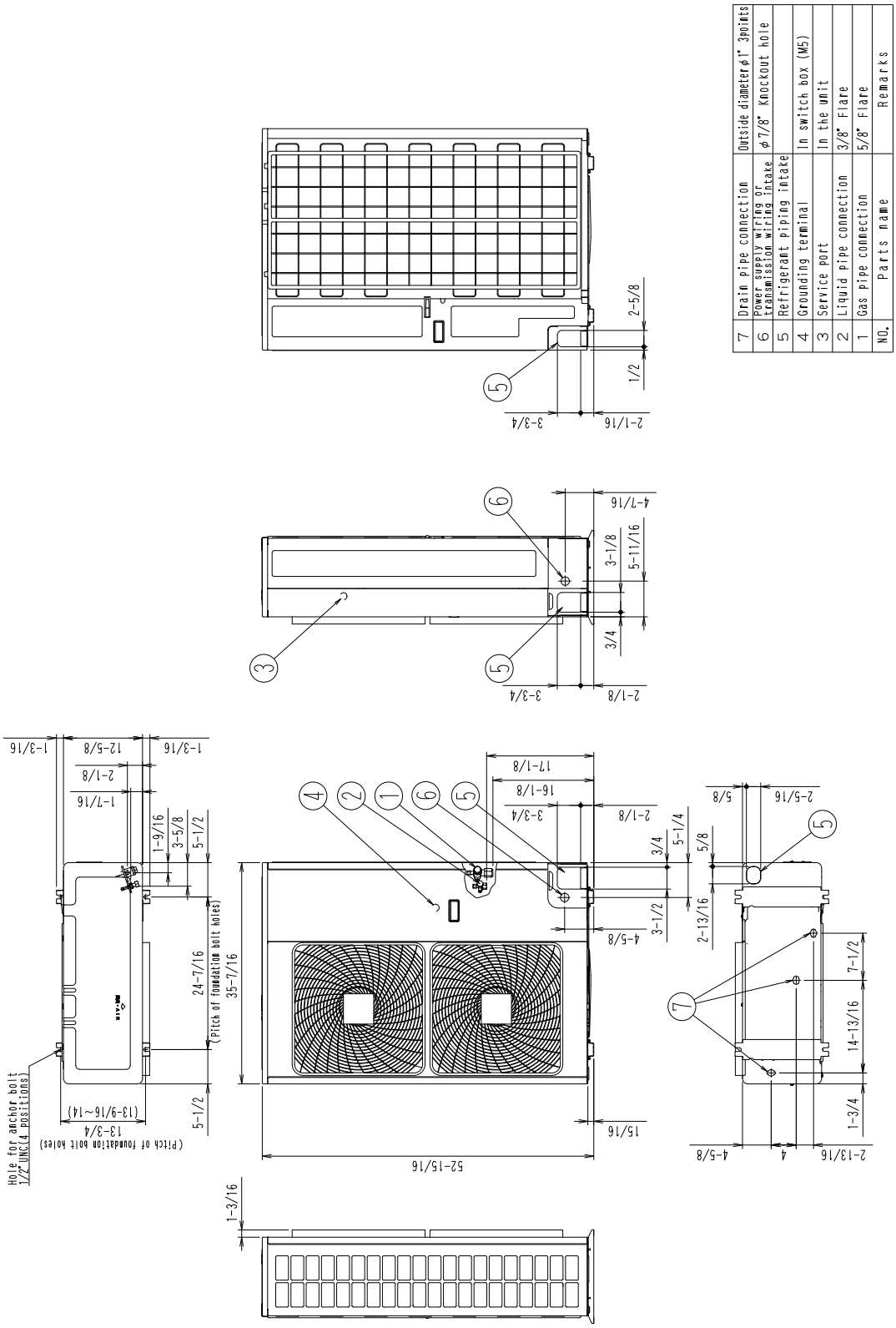
Unit (in.)



RZR36PVJU / RZR42PVJU
RZQ36PVJU9 / RZQ42PVJU9

Unit (in.)

3D065351A



NO.	Parts name	Remarks
7	Drain pipe connection	Outside diameter ø1" 3points
6	Power supply wiring or transmission wiring intake	ø7/8" Knockout hole
5	Refrigerant piping intake	
4	Grounding terminal	In switch box (M5)
3	Service port	In the unit
2	Liquid pipe connection	3/8" Flare
1	Gas pipe connection	5/8" Flare

4.5 Installation service space

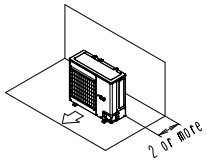
RZR18PVJU / RZR24PVJU / RZR30PVJU
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU

INSTALLATION SERVICE SPACE

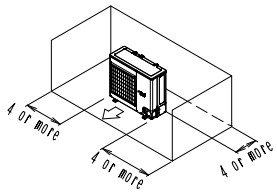
STAND-ALONE INSTALLATION (The measure of these values is "in".)

No obstacle above

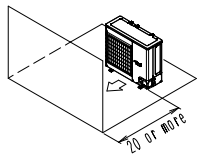
(1)Obstacle on the suction side only



(2)Obstacle on both sides and suction side, too

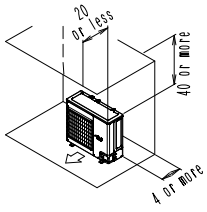


(3)Obstacle on the discharge side only

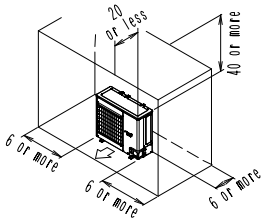


Obstacle above, too

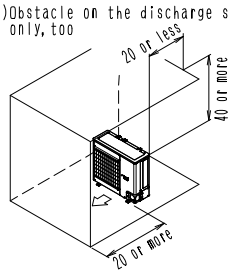
(1)Obstacle on the suction side, too



(2)Obstacle on both sides and suction side, too



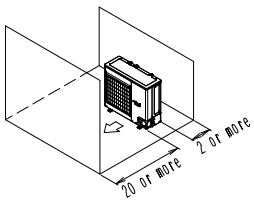
(3)Obstacle on the discharge side only, too



When there are obstacles on both suction and discharge sides

Pattern 1 When the obstacles on the discharge side is higher than the unit

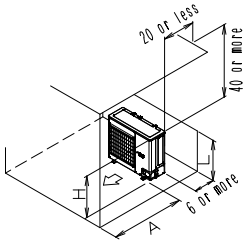
(1)No obstacle above
(There is no limit for the height of obstructions on the suction side.)



(2)Obstacle above, too
The relations between H, A and L are as follows.

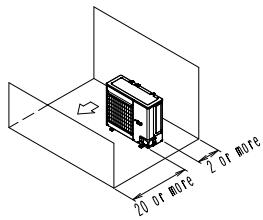
	L	A
L≦H	L≦1/2H	30 or more
	1/2H<L≦H	40 or more
L>H	Set the stand as : L≦H Refer to the column of L≦H for A	

(✽)Close the bottom of the installation frame to prevent the discharged air from being bypassed.



Pattern 2 When the obstacle on the discharge side is lower than the unit

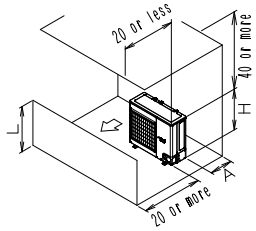
(1)No obstacle above
(There is no limit for the height of obstructions on the suction side.)



(2)Obstacle above, too
The relations between H, A and L are as follows.

	L	A
L≦H	L≦1/2H	2 or more
	1/2H<L≦H	4 or more
L>H	Set the stand as : L≦H Refer to the column of L≦H for A	

(✽)Close the bottom of the installation frame to prevent the discharged air from being bypassed.



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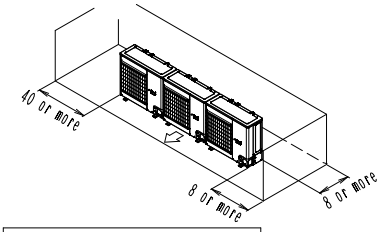
(✱) • In side extraction, please provide the space of piping.

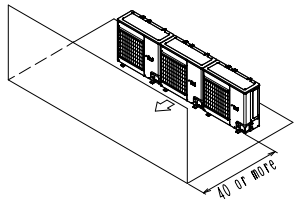
SERIES INSTALLATION (2 OR MORE) (The measure of these values is "in".)

No obstacle above

(1) Obstacle on the suction side and both sides

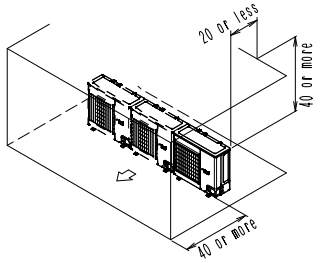


(2) Obstacle on the discharge side only

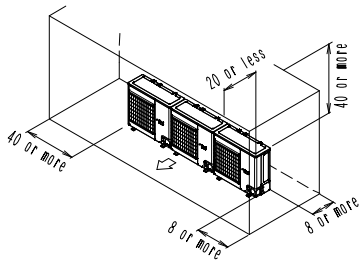


Obstacle above, too

(1) Obstacle on the discharge side



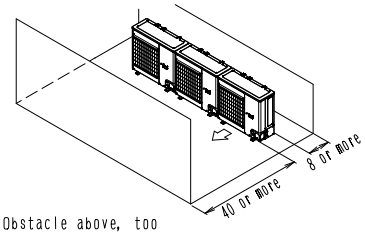
(2) Obstacle on the suction side and both sides



When there are obstacles on both suction and discharge sides

Pattern 1 When the obstacles on the discharge side is higher than the unit

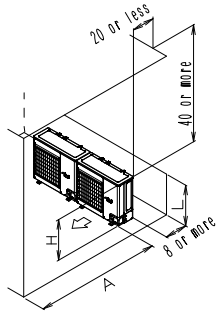
(1) No obstacle above
(There is no limit for the height of obstructions on the suction side.)



(2) Obstacle above, too
The relations between H, A and L are as follows.

	L	A
L≦H	L≦1/2H	40 or more
	1/2H<L≦H	50 or more
L>H	Set the stand as : L≦H Refer to the column of L≦H for A	

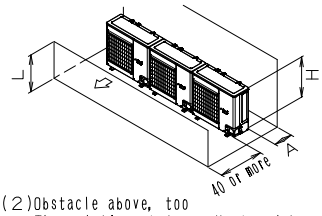
(✱) Close the bottom of the installation frame to prevent the discharged air from being bypassed. Limit of series installation is 2 unit.



Pattern 2 When the obstacle on the discharge side is lower than the unit

(1) No obstacle above
(There is no limit for the height of obstructions on the suction side.)
The relations between H, A and L are as follows.

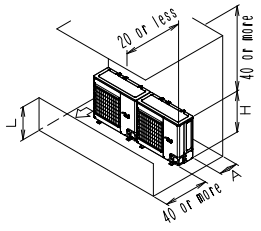
L	A
L≦1/2H	6 or more
1/2H<L≦H	8 or more



(2) Obstacle above, too
The relations between H, A and L are as follows.

	L	A
L≦H	L≦1/2H	6 or more
	1/2H<L≦H	8 or more
L>H	Set the stand as : L≦H Refer to the column of L≦H for A	

(✱) Close the bottom of the installation frame to prevent the discharged air from being bypassed. Limit of series installation is 2 unit.



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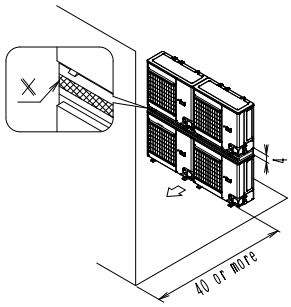
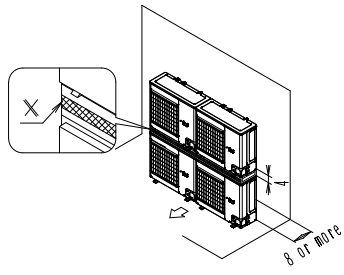
DOUBLE-DECKER INSTALLATION (The measure of these values is "in".)

(※) • Do not stack more than two unit.
• The drain piping construction size of upper side outdoor unit is needed about 4 in.
• Close " X " to prevent the discharged air from being bypassed
(▨ : the gap between the upper and lower outdoor units).
• In side extraction, please provide the space of piping.

(1) Obstacle on the discharge side



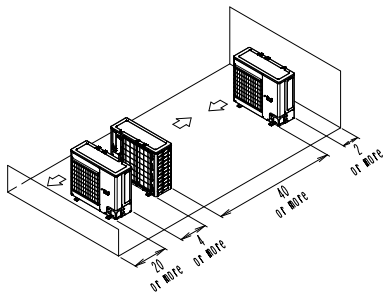
(2) Obstacle on the suction side



MULTIPLE ROWS OF SERIES INSTALLATION (ON THE ROOFTOP, ETC.)

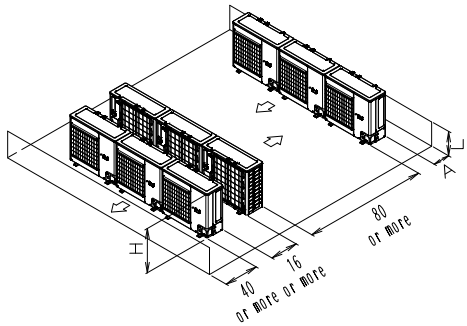
(The measure of these values is "in".)

(1) One row of stand-alone installation



(2) Rows of series installation (2 or more)
The relations between H, A and L are as follows.

	L	A
L≦H	L≦1/2H	6 or more
	1/2H<L≦H	8 or more
L>H	Can not be installed	



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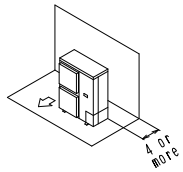
RZR36PVJU / RZR42PVJU
RZQ36PVJU9 / RZQ42PVJU9

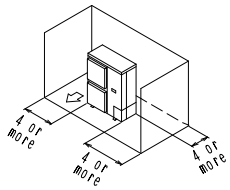
REQUIRED INSTALLATION SPACE

- The unit of the values is inch.
- In case of series installation, some space between the units is needed for wiring with conduit and servicing.

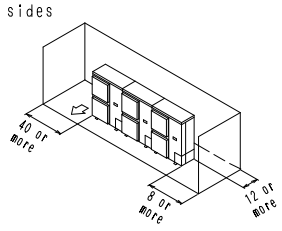
1. Where there is an obstacle on the suction side:
   (a) No obstacle above
   (1) Stand-alone installation
   - Obstacle on the suction side only



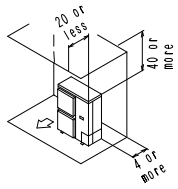
   - Obstacle on both sides



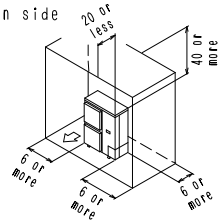
   (2) Series installation (2 or more)
   - Obstacle on both sides



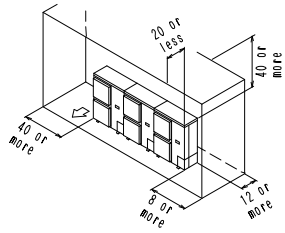
   (b) Obstacle above, too
   (1) Stand-alone installation
   - Obstacle on the suction side, too



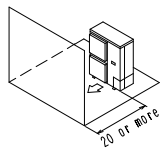
   - Obstacle on the suction side and both sides



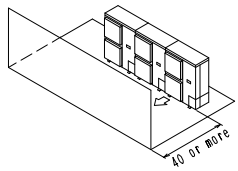
   (2) Series installation (2 or more)
   - Obstacle on the suction side and both sides



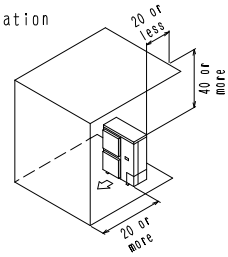
2. Where there is an obstacle on the discharge side:
   (a) No obstacle above
   (1) Stand-alone installation



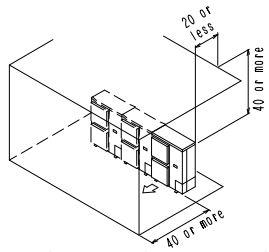
   (2) Series installation (2 or more)



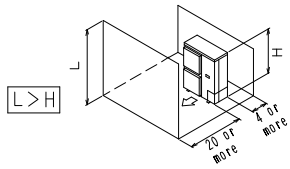
   (b) Obstacle above, too
   (1) Stand-alone installation



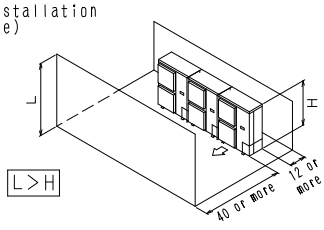
   (2) Series installation (2 or more)



3. Where there are obstacles on both suction and discharge sides:
   Pattern 1
   Where the obstacles on the discharge side is higher than the unit:
   (There is no height limit for obstructions on the intake side.)
   (a) No obstacle above
   (1) Stand-alone installation



   (2) Series installation (2 or more)



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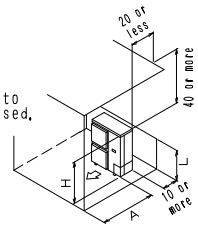
(b) Obstacle above, too

(1)Stand-alone installation

The relations between H, A and L are as follows:

	L	A
L≦H	0<L≦1/2H	30
	1/2H<L≦H	40
H<L	Set the stand as: L≦H.	

Close the bottom of the installation frame to prevent the discharged air from being bypassed.



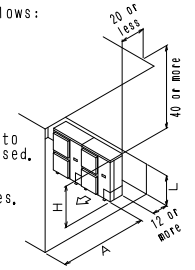
(2)Series installation
(2 or more)

The relations between H, A and L are as follows:

	L	A
L≦H	0<L≦1/2H	40
	1/2H<L≦H	50
H<L	Set the stand as: L≦H.	

Close the bottom of the installation frame to prevent the discharged air from being bypassed.

Only two units can be installed for this series.



Pattern 2

Where the obstacles on the discharge side is lower than the unit:

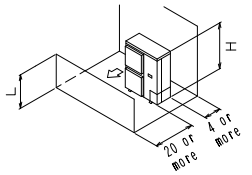
(There is no height limit for obstructions on the intake side.)

(a) No obstacle above

(1)Stand-alone installation

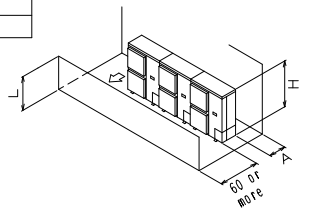
L≦H

(2)Series installation
(2 or more)



The relations between H, A and L are as follows:

L	A
0<L≦1/2H	10
1/2H<L≦H	12



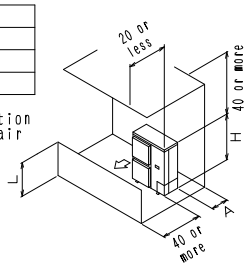
(b) Obstacle above, too

(1)Stand-alone installation

The relations between H, A and L are follows:

	L	A
L≦H	0<L≦1/2H	4
	1/2H<L≦H	8
H<L	Set the stand as: L≦H.	

Close the bottom of the installation frame to prevent the discharged air from being bypassed.



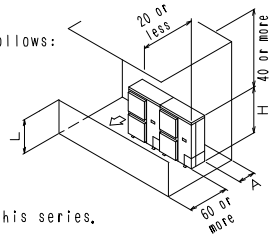
(2)Series installation

The relations between H, A and L are as follows:

	L	A
L≦H	0<L≦1/2H	10
	1/2H<L≦H	12
H<L	Set the stand as: L≦H.	

Close the bottom of the installation frame to prevent the discharged air from being bypassed.

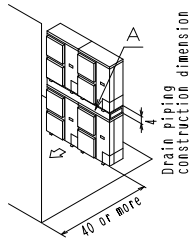
Only two units can be installed for this series.



4. Double-decker installation

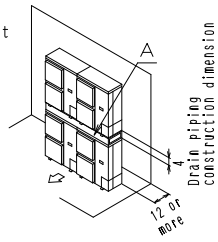
(a) Obstacle on the discharge side
Close the gap A (the gap between the upper and lower outdoor units) to prevent the discharged air from being bypassed.

Do not stack more than two unit.



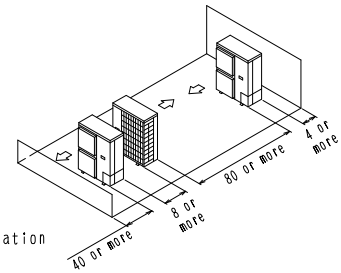
(b) Obstacle on the suction side
Close the gap A (the gap between the upper and lower outdoor units) to prevent the discharged air from being bypassed.

Do not stack more than two unit.



5. Multiple rows of series installation (on the rooftop, etc.)

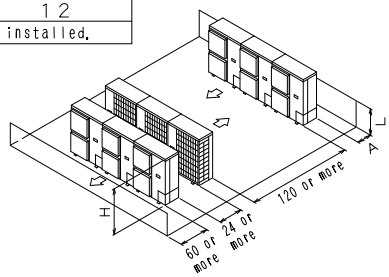
(a) One row of stand-alone installation



(b) Rows of series installation
(2 or more)

The relations between H, A and L are as follows:

	L	A
L≦H	0<L≦1/2H	10
	1/2H<L≦H	12
H<L	Cannot be installed.	



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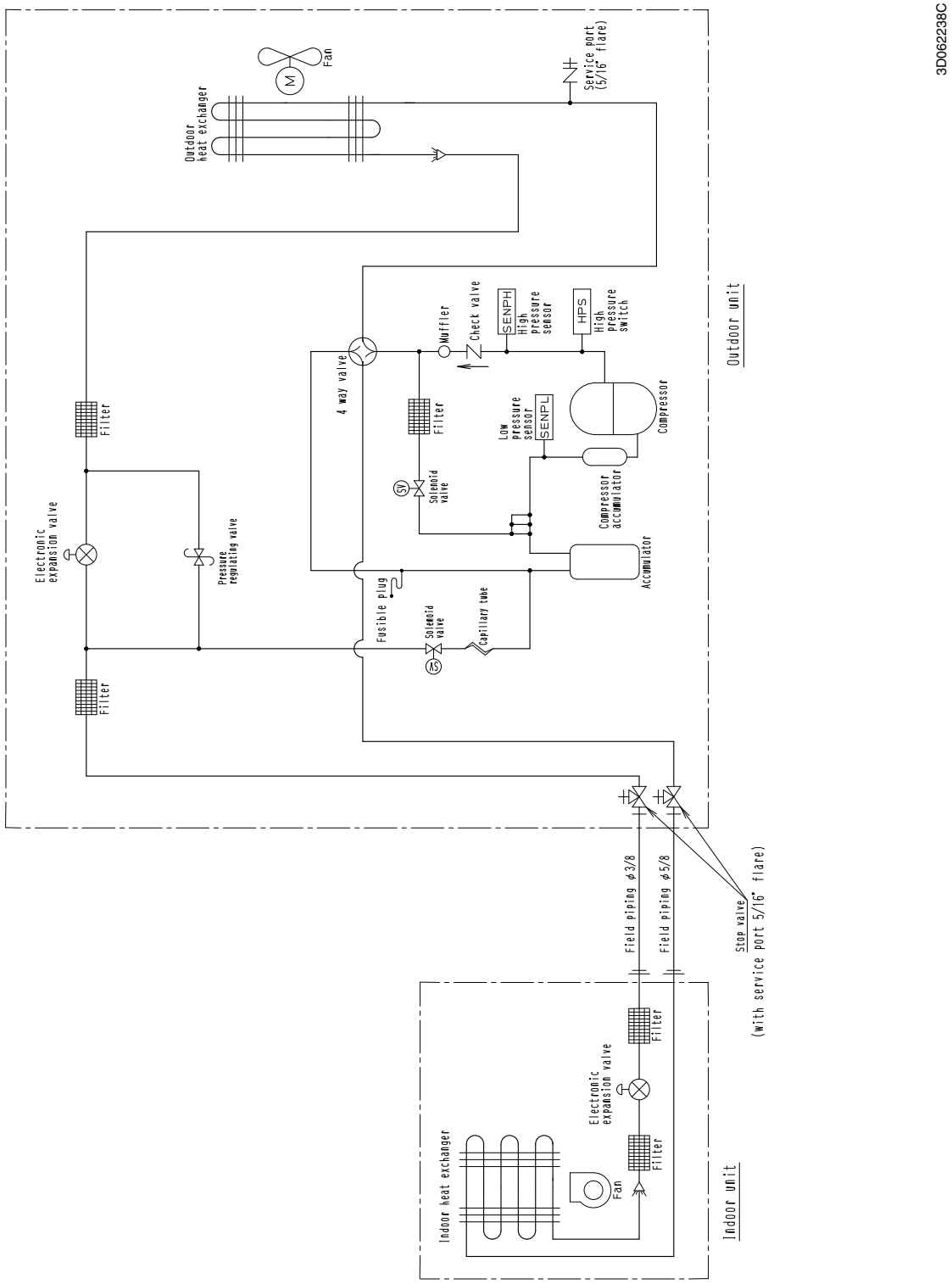
5. Piping diagrams

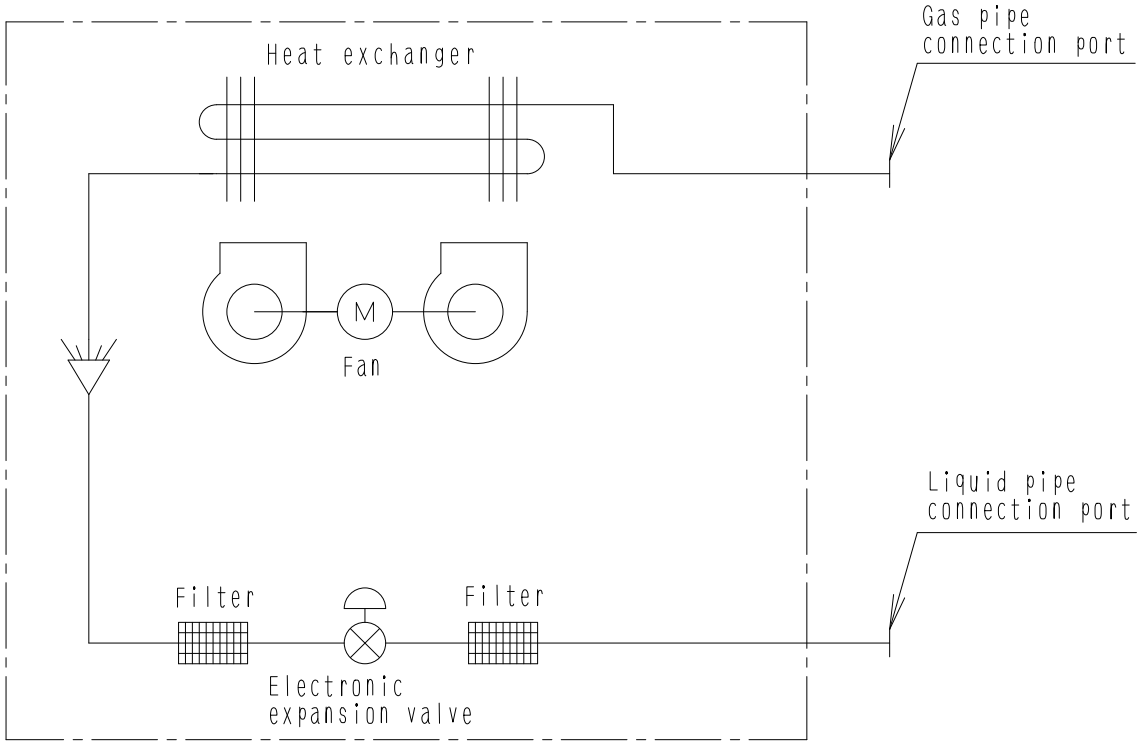
5.1 Indoor unit + Outdoor unit

FCQ18PVJU / FHQ18PVJU / FAQ18PVJU + RZR18PVJU / RZQ18PVJU9
FCQ24PVJU / FHQ24PVJU / FAQ24PVJU + RZR24PVJU / RZQ24PVJU9
FCQ30PVJU / FHQ30PVJU + RZR30PVJU / RZQ30PVJU



5.2 Indoor unit

FCQ36MVJU / FCQ42MVJU
FHQ36MVJU / FHQ42MVJU



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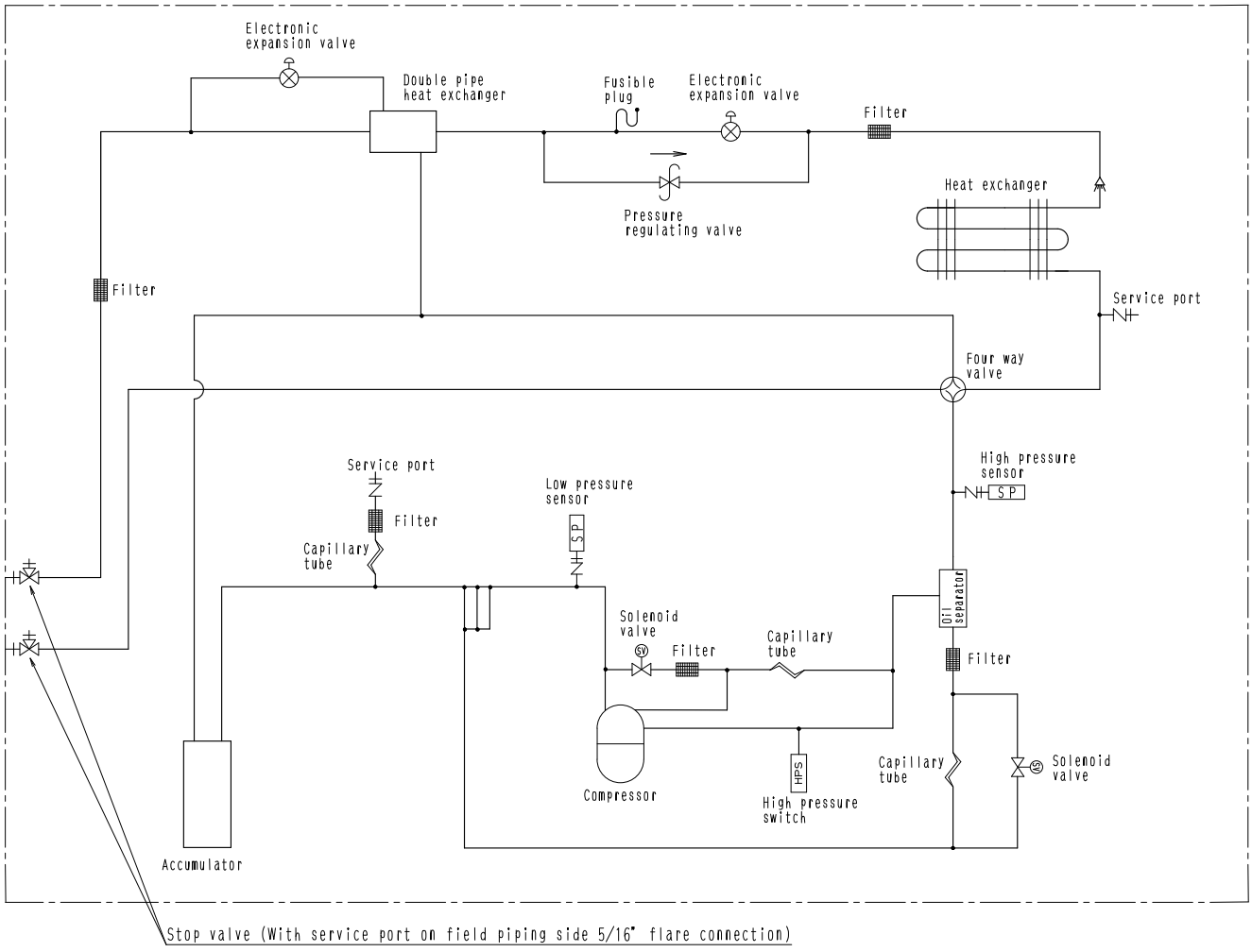
5.3 Outdoor unit

RZR36PVJU / RZR42PVJU
RZQ36PVJU9 / RZQ42PVJU9



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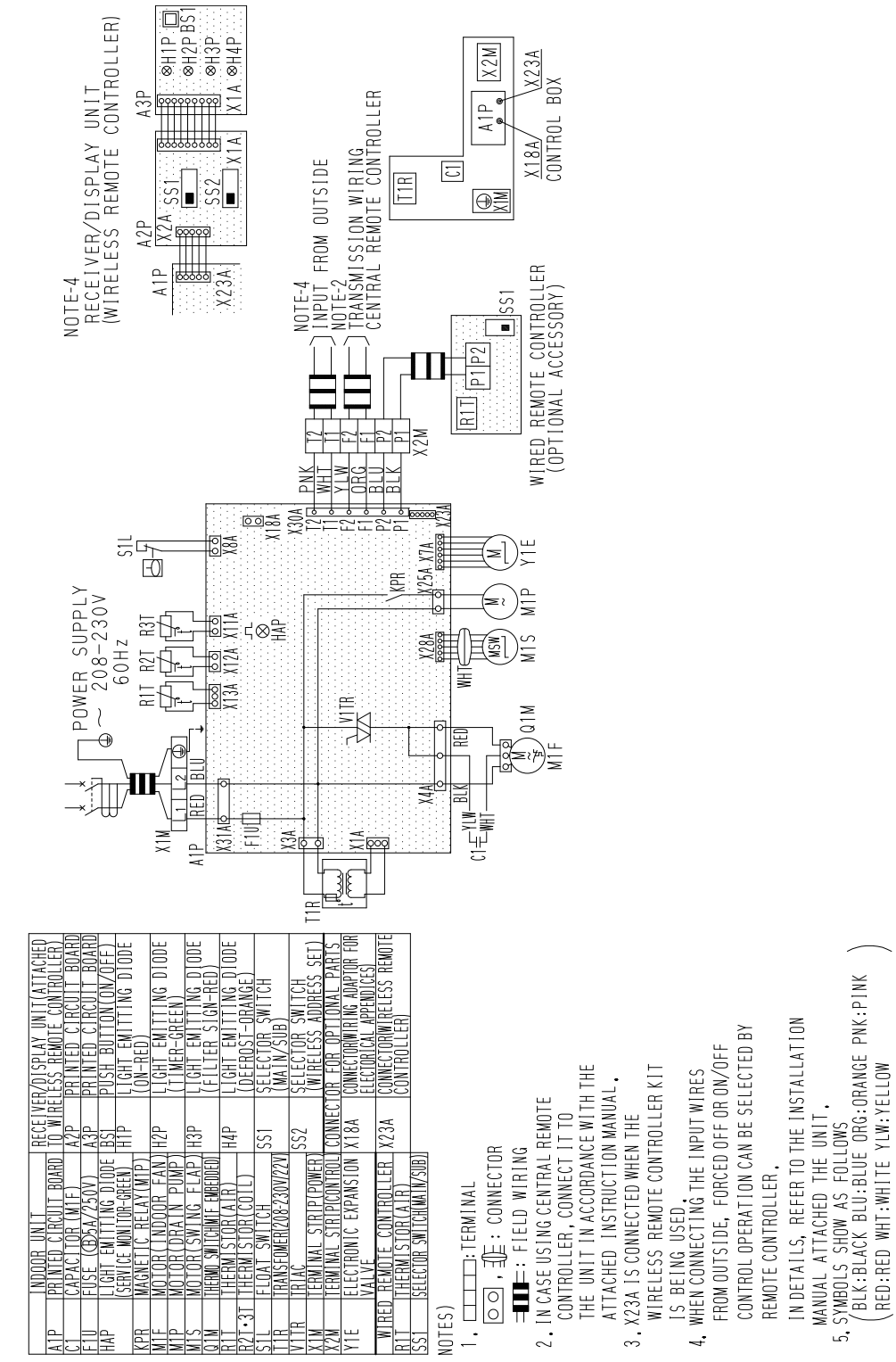
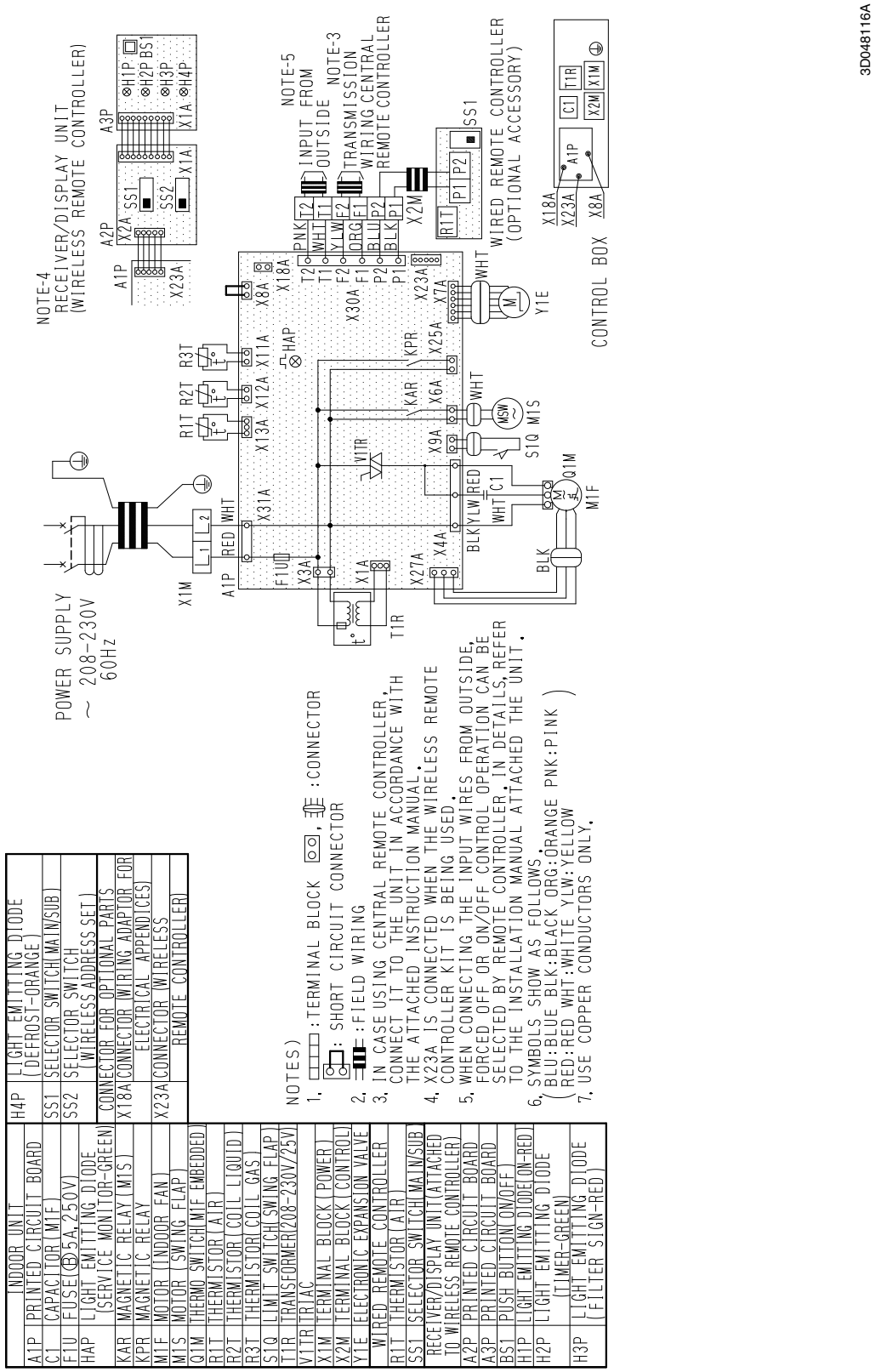
6. Wiring diagrams

6.1 Indoor unit

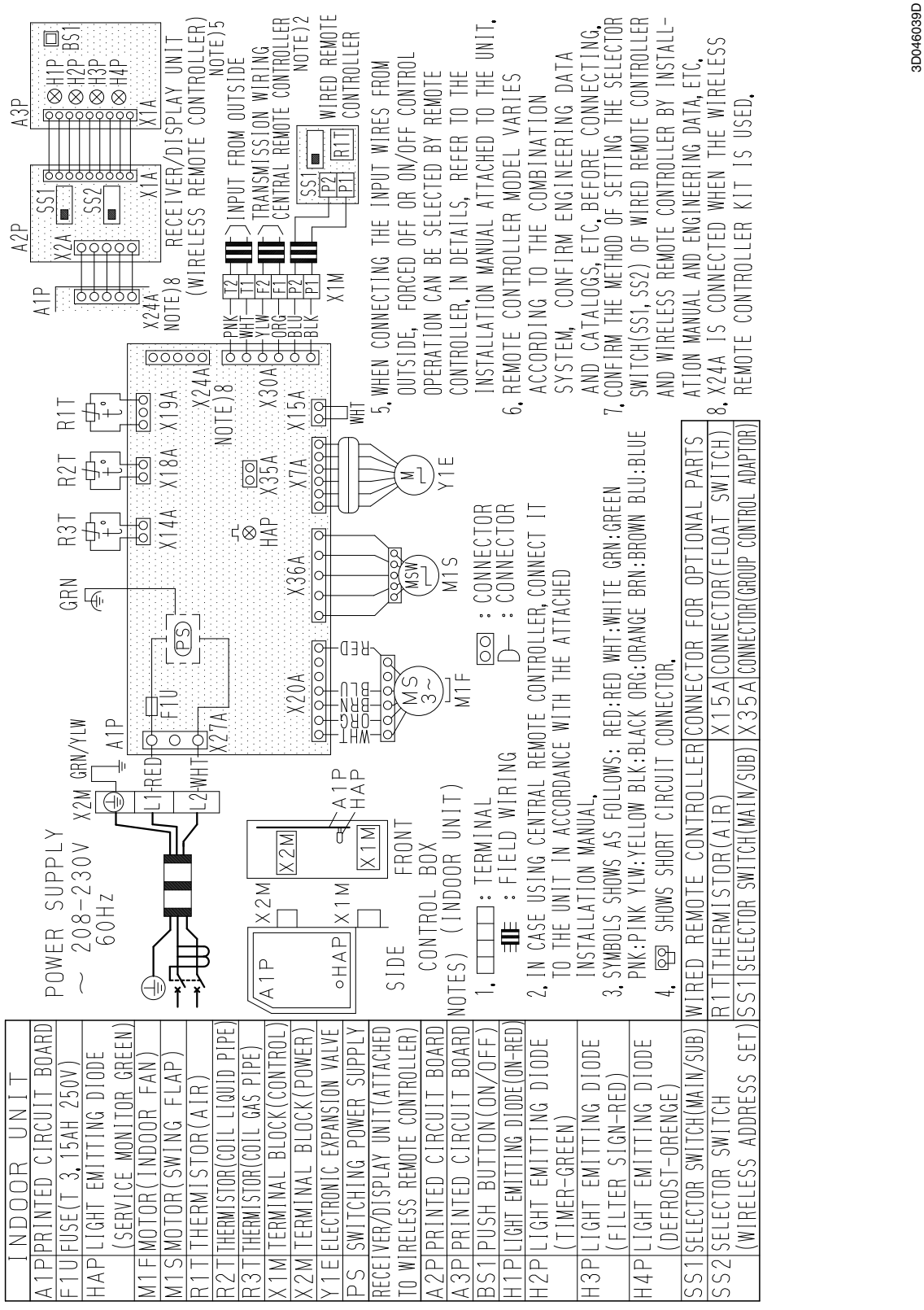
FCQ18PVJU / FCQ24PVJU / FCQ30PVJU
FCQ36MVJU / FCQ42MVJU



FHQ18PVJU / FHQ24PVJU / FHQ30PVJU
FHQ36MVJU / FHQ42MVJU

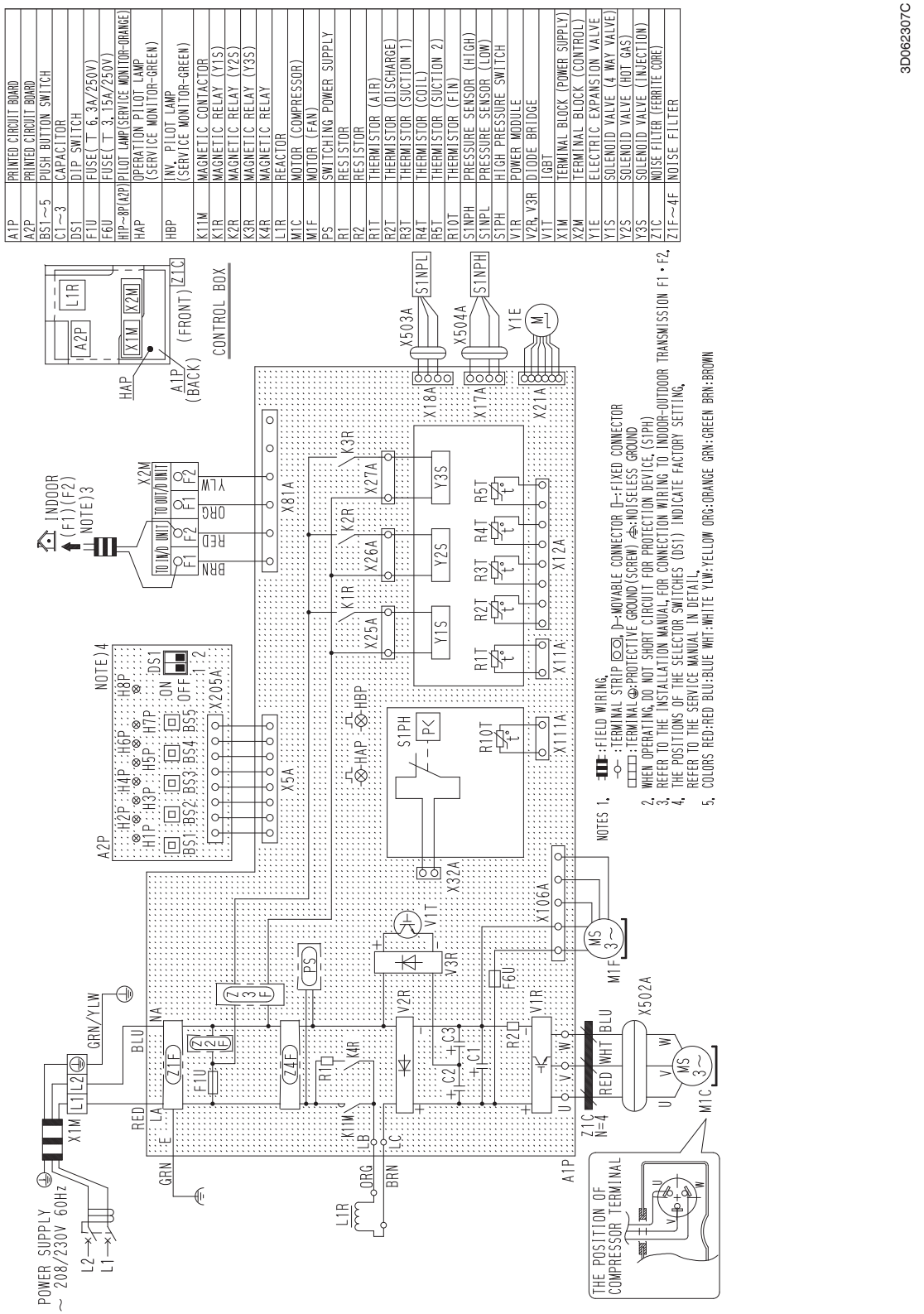

3D048116A
INDOOR UNIT
A1P PRINTED CIRCUIT BOARD
C1 CAPACITOR(M1F)
F1U FUSE(@5A,250V)
HAP LIGHT EMITTING DIODE (SERVICE MONITOR-GREEN)
KAR MAGNETIC RELAY(MTS)
KPR MAGNETIC RELAY
M1F MOTOR(INDOOR FAN)
M1S MOTOR(SWING FLAP)
Q1M THERMO SWITCH(M1F EMBEDDED)
R1T THERMISTOR(AIR)
R2T THERMISTOR(COIL LIQUID)
R3T THERMISTOR(COIL GAS)
S1Q LIMIT SWITCH(SWING FLAP)
T1R TRANSFORMER(208-230V/25V)
V1TR TRIAC
X1M TERMINAL BLOCK(POWER)
X2M TERMINAL BLOCK(CONTROL)
Y1E ELECTRONIC EXPANSION VALVE
WIRED REMOTE CONTROLLER
R1T THERMISTOR(AIR)
SS1 SELECTOR SWITCH(MAIN/SUB)
RECEIVER/DISPLAY UNIT(ATTACHED TO WIRELESS REMOTE CONTROLLER)
A2P PRINTED CIRCUIT BOARD
A3P PRINTED CIRCUIT BOARD
BS1 PUSH BUTTON(ON/OFF)
H1P LIGHT EMITTING DIODE(ON-RED)
H2P LIGHT EMITTING DIODE (TIMER-GREEN)
H3P LIGHT EMITTING DIODE (FILTER SIGN-RED)
H4P LIGHT EMITTING DIODE (DEFROST-ORANGE)
SS1 SELECTOR SWITCH(MAIN/SUB)
SS2 SELECTOR SWITCH (WIRELESS ADDRESS SET)
CONNECTOR FOR OPTIONAL PARTS
X18A CONNECTOR(WIRING ADAPTOR FOR ELECTRICAL APPEND(ICES))
X23A CONNECTOR(WIRELESS REMOTE CONTROLLER)
NOTES)
1. : TERMINAL BLOCK , : CONNECTOR
: SHORT CIRCUIT CONNECTOR
2. : FIELD WIRING
3. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTRUCTION MANUAL.
4. X23A IS CONNECTED WHEN THE WIRELESS REMOTE CONTROLLER KIT IS BEING USED.
5. WHEN CONNECTING THE INPUT WIRES FROM OUTSIDE, FORCED OFF OR ON/OFF CONTROL OPERATION CAN BE SELECTED BY REMOTE CONTROLLER.IN DETAILS, REFER TO THE INSTALLATION MANUAL ATTACHED THE UNIT.
6. SYMBOLS SHOW AS FOLLOWS.
(BLU:BLUE BLK:BLACK ORG:ORANGE PNK:PINK)
RED:RED WHT:WHITE YLW:YELLOW
7. USE COPPER CONDUCTORS ONLY.
POWER SUPPLY ~ 208-230V 60Hz
NOTE-4 RECEIVER/DISPLAY UNIT (WIRELESS REMOTE CONTROLLER)
NOTE-5 INPUT FROM OUTSIDE
NOTE-3 TRANSMISSION WIRING CENTRAL REMOTE CONTROLLER
WIRED REMOTE CONTROLLER (OPTIONAL ACCESSORY)
CONTROL BOX
A1P A2P A3P X1M X2A X23A X1A X2M X18A X23A X8A X7A X25A X6A X9A X4A X27A X3A X31A X13A X12A X11A X1A F1U V1TR T1R R1T R2T R3T HAP KPR KAR S1Q M1S Q1M M1F Y1E SS1 R1T P1 P2 H1P H2P BS1 H3P H4P C1 T1R X2M X1M
PNK WHT YLW ORG BLU BLK RED WHT BLK

FAQ18PVJU / FAQ24PVJU

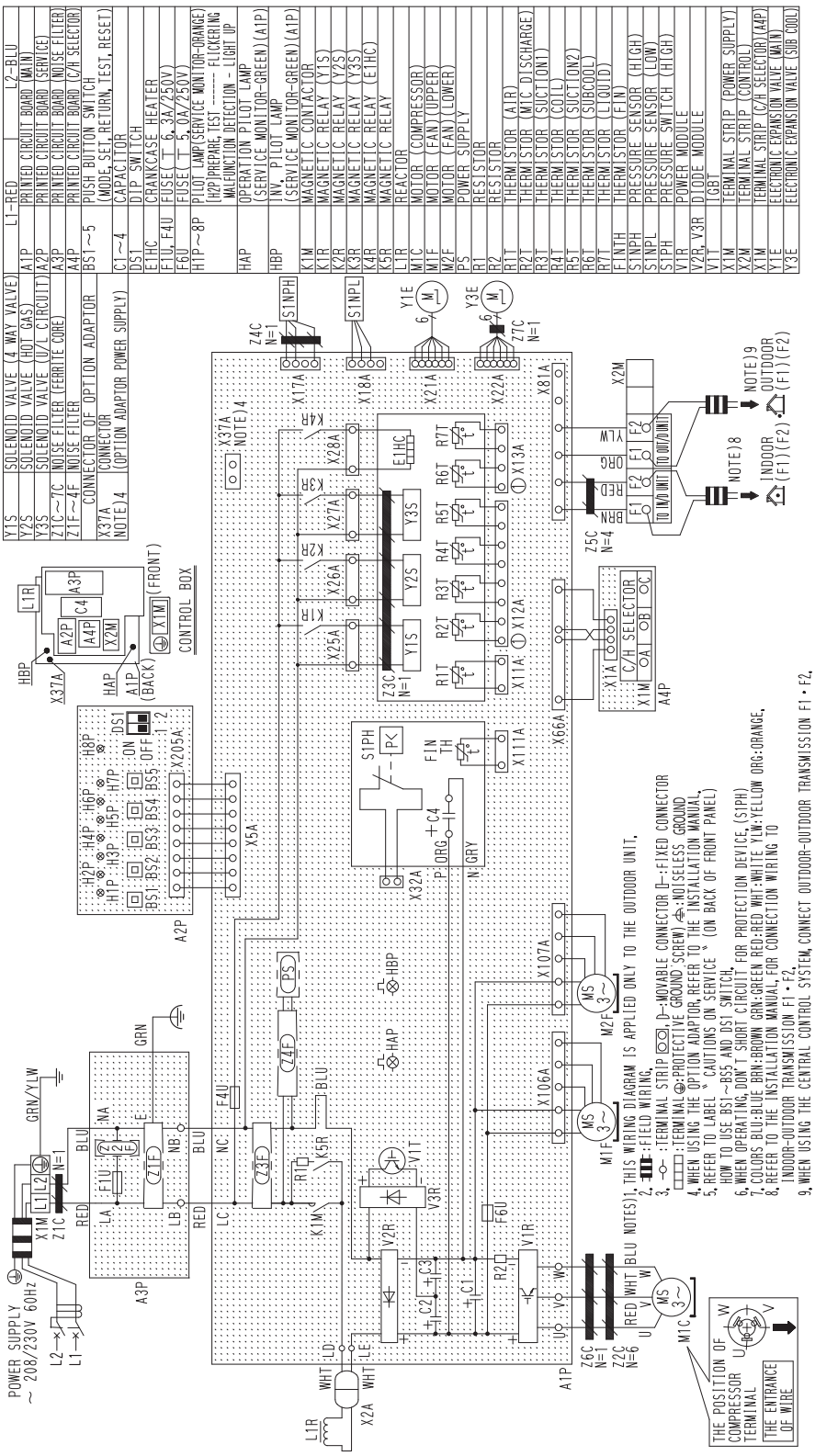


6.2 Outdoor unit

RZR18PVJU / RZR24PVJU / RZR30PVJU
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU

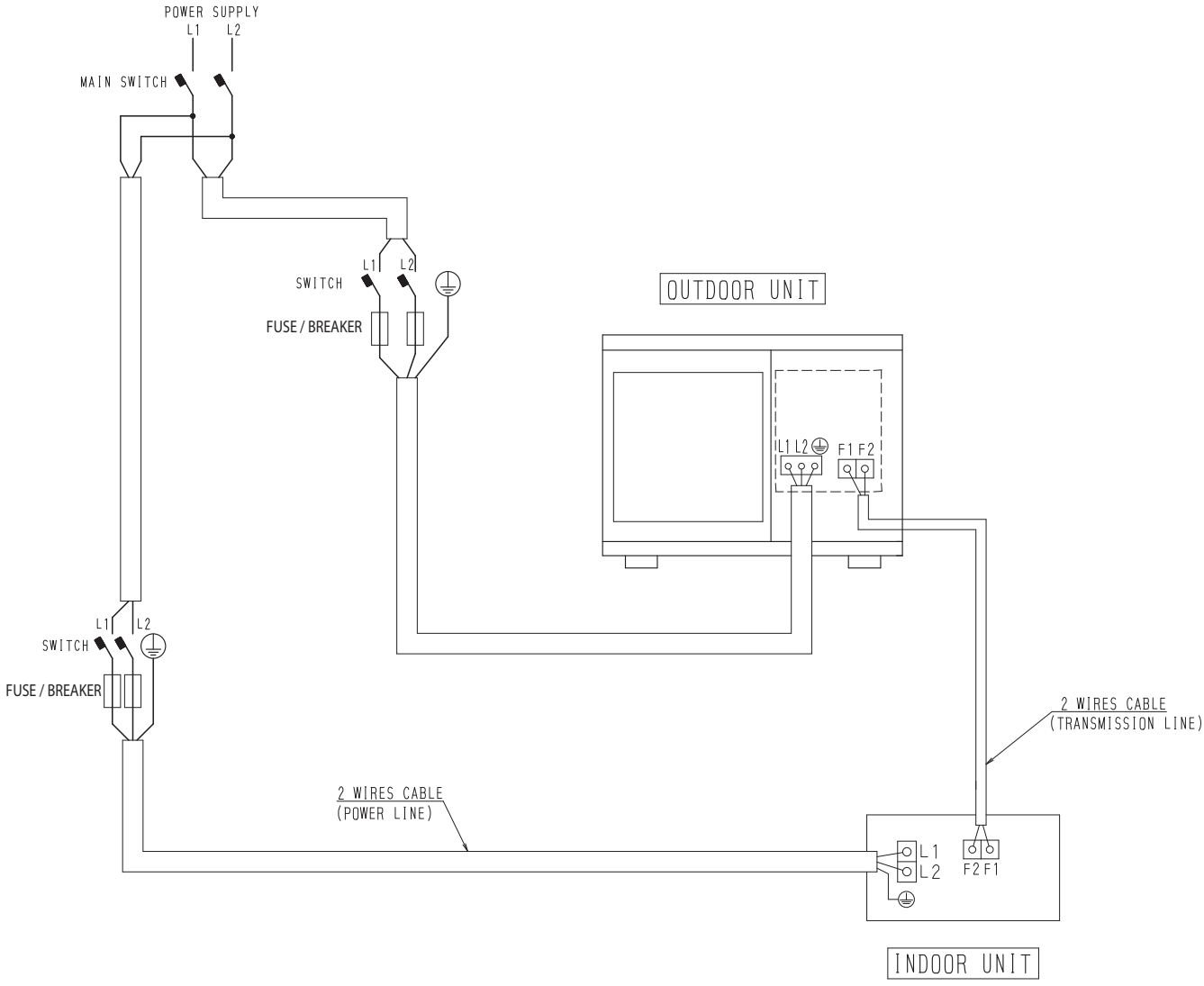

3D062307C
A1P PRINTED CIRCUIT BOARD
A2P PRINTED CIRCUIT BOARD
BS1~5 PUSH BUTTON SWITCH
C1~3 CAPACITOR
DS1 DIP SWITCH
F1U FUSE(T 6.3A/250V)
F6U FUSE(T 3.15A/250V)
H1P~8P(A2P) PILOT LAMP(SERVICE MONITOR-ORANGE)
HAP OPERATION PILOT LAMP (SERVICE MONITOR-GREEN)
HBP INV. PILOT LAMP (SERVICE MONITOR-GREEN)
K1M MAGNETIC CONTACTOR
K1R MAGNETIC RELAY (Y1S)
K2R MAGNETIC RELAY (Y2S)
K3R MAGNETIC RELAY (Y3S)
K4R MAGNETIC RELAY
L1R REACTOR
M1C MOTOR (COMPRESSOR)
M1F MOTOR (FAN)
PS SWITCHING POWER SUPPLY
R1 RESISTOR
R2 RESISTOR
R1T THERMISTOR (AIR)
R2T THERMISTOR (DISCHARGE)
R3T THERMISTOR (SUCTION 1)
R4T THERMISTOR (COIL)
R5T THERMISTOR (SUCTION 2)
R10T THERMISTOR (FIN)
S1NPH PRESSURE SENSOR (HIGH)
S1NPL PRESSURE SENSOR (LOW)
S1PH HIGH PRESSURE SWITCH
V1R POWER MODULE
V2R, V3R DIODE BRIDGE
V1T IGBT
X1M TERMINAL BLOCK (POWER SUPPLY)
X2M TERMINAL BLOCK (CONTROL)
Y1E ELECTRIC EXPANSION VALVE
Y1S SOLENOID VALVE (4 WAY VALVE)
Y2S SOLENOID VALVE (HOT GAS)
Y3S SOLENOID VALVE (INJECTION)
Z1C NOISE FILTER (FERRITE CORE)
Z1F~4F NOISE FILTER
CONTROL BOX
INDOOR (F1)(F2) NOTE)3
POWER SUPPLY ~ 208/230V 60Hz
THE POSITION OF COMPRESSOR TERMINAL
NOTES 1. : FIELD WIRING, : TERMINAL STRIP D-:MOVABLE CONNECTOR D-:FIXED CONNECTOR : TERMINAL :PROTECTIVE GROUND(SCREW) :NOISELESS GROUND
2. WHEN OPERATING, DO NOT SHORT CIRCUIT FOR PROTECTION DEVICE, (S1PH)
3. REFER TO THE INSTALLATION MANUAL FOR CONNECTION WIRING TO INDOOR-OUTDOOR TRANSMISSION F1・F2,
4. THE POSITIONS OF THE SELECTOR SWITCHES (DS1) INDICATE FACTORY SETTING, REFER TO THE SERVICE MANUAL IN DETAIL,
5. COLORS RED:RED BLU:BLUE WHT:WHITE YLW:YELLOW ORG:ORANGE GRN:GREEN BRN:BROWN

RZR36PVJU / RZR42PVJU
RZQ36PVJU9 / RZQ42PVJU9


3D071178
Y1S SOLENOID VALVE (4 WAY VALVE) L1-RED L2-BLU
Y2S SOLENOID VALVE (HOT GAS) A1P PRINTED CIRCUIT BOARD (MAIN)
Y3S SOLENOID VALVE (U/L CIRCUIT) A2P PRINTED CIRCUIT BOARD (SERVICE)
Z1C~7C NOISE FILTER (FERRITE CORE) A3P PRINTED CIRCUIT BOARD (NOISE FILTER)
Z1F~4F NOISE FILTER A4P PRINTED CIRCUIT BOARD (C/H SELECTOR)
CONNECTOR OF OPTION ADAPTOR BS1~5 PUSH BUTTON SWITCH (MODE, SET, RETURN, TEST, RESET)
X37A CONNECTOR C1~4 CAPACITOR
NOTE)4 (OPTION ADAPTOR POWER SUPPLY) DS1 DIP SWITCH
E1HC CRANKCASE HEATER
F1U, F4U FUSE(T 6.3A/250V)
F6U FUSE(T 5.0A/250V)
H1P~8P PILOT LAMP(SERVICE MONITOR-ORANGE) (H2P)PREPARE TEST ----- FLICKERING MALFUNCTION DETECTION - LIGHT UP
HAP OPERATION PILOT LAMP (SERVICE MONITOR-GREEN)(A1P)
HBP INV. PILOT LAMP (SERVICE MONITOR-GREEN)(A1P)
K1M MAGNETIC CONTACTOR
K1R MAGNETIC RELAY (Y1S)
K2R MAGNETIC RELAY (Y2S)
K3R MAGNETIC RELAY (Y3S)
K4R MAGNETIC RELAY (E1HC)
K5R MAGNETIC RELAY
L1R REACTOR
M1C MOTOR (COMPRESSOR)
M1F MOTOR (FAN)(UPPER)
M2F MOTOR (FAN)(LOWER)
PS POWER SUPPLY
R1 RESISTOR
R2 RESISTOR
R1T THERMISTOR (AIR)
R2T THERMISTOR (M1C DISCHARGE)
R3T THERMISTOR (SUCTION1)
R4T THERMISTOR (COIL)
R5T THERMISTOR (SUCTION2)
R6T THERMISTOR (SUBCOOL)
R7T THERMISTOR (LIQUID)
F1NTH THERMISTOR (FIN)
S1NPH PRESSURE SENSOR (HIGH)
S1NPL PRESSURE SENSOR (LOW)
S1PH PRESSURE SWITCH (HIGH)
V1R POWER MODULE
V2R, V3R DIODE MODULE
V1T IGBT
X1M TERMINAL STRIP (POWER SUPPLY)
X2M TERMINAL STRIP (CONTROL)
X1M TERMINAL STRIP (C/A SELECTOR)(A4P)
Y1E ELECTRONIC EXPANSION VALVE (MAIN)
Y3E ELECTRONIC EXPANSION VALVE (SUB COOL)
POWER SUPPLY ~ 208/230V 60Hz
CONTROL BOX
INDOOR (F1)(F2)
OUTDOOR (F1)(F2)
NOTE)8
NOTE)9
THE POSITION OF COMPRESSOR TERMINAL
THE ENTRANCE OF WIRE
NOTES)1. THIS WIRING DIAGRAM IS APPLIED ONLY TO THE OUTDOOR UNIT.
2. : FIELD WIRING.
3. : TERMINAL STRIP, : MOVABLE CONNECTOR, : FIXED CONNECTOR
: TERMINAL, : PROTECTIVE GROUND SCREW, : NOISELESS GROUND
4. WHEN USING THE OPTION ADAPTOR, REFER TO THE INSTALLATION MANUAL.
5. REFER TO LABEL " CAUTIONS ON SERVICE " (ON BACK OF FRONT PANEL)
HOW TO USE BS1~BS5 AND DS1 SWITCH.
6. WHEN OPERATING, DON'T SHORT CIRCUIT FOR PROTECTION DEVICE, (S1PH)
7. COLORS BLU:BLUE BRN:BROWN GRN:GREEN RED:RED WHT:WHITE YLW:YELLOW ORG:ORANGE
8. REFER TO THE INSTALLATION MANUAL, FOR CONNECTION WIRING TO
INDOOR-OUTDOOR TRANSMISSION F1・F2.
9. WHEN USING THE CENTRAL CONTROL SYSTEM, CONNECT OUTDOOR-OUTDOOR TRANSMISSION F1・F2.

6.3 External connection diagram

RZR18PVJU / RZR24PVJU / RZR30PVJU
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU



Notes
1) All wiring, components and materials to be procured on the site must comply with the applicable local and national codes.
2) Use copper conductors only.
3) As for details, see wiring diagram.
4) Install circuit breaker for safety.
5) All field wiring and components must be provided by licensed electrician.
6) Unit shall be grounded in compliance with the applicable local and national codes.
7) Wiring shown is general points-of-connection guides only and is not intended for or to include all details for a specific installation.
8) Be sure to install the switch and the fuse to the power line of each equipment.
9) Install the main switch that can interrupt all the power sources in an integrated manner because this system consists of the equipment utilizing the multiple power sources.

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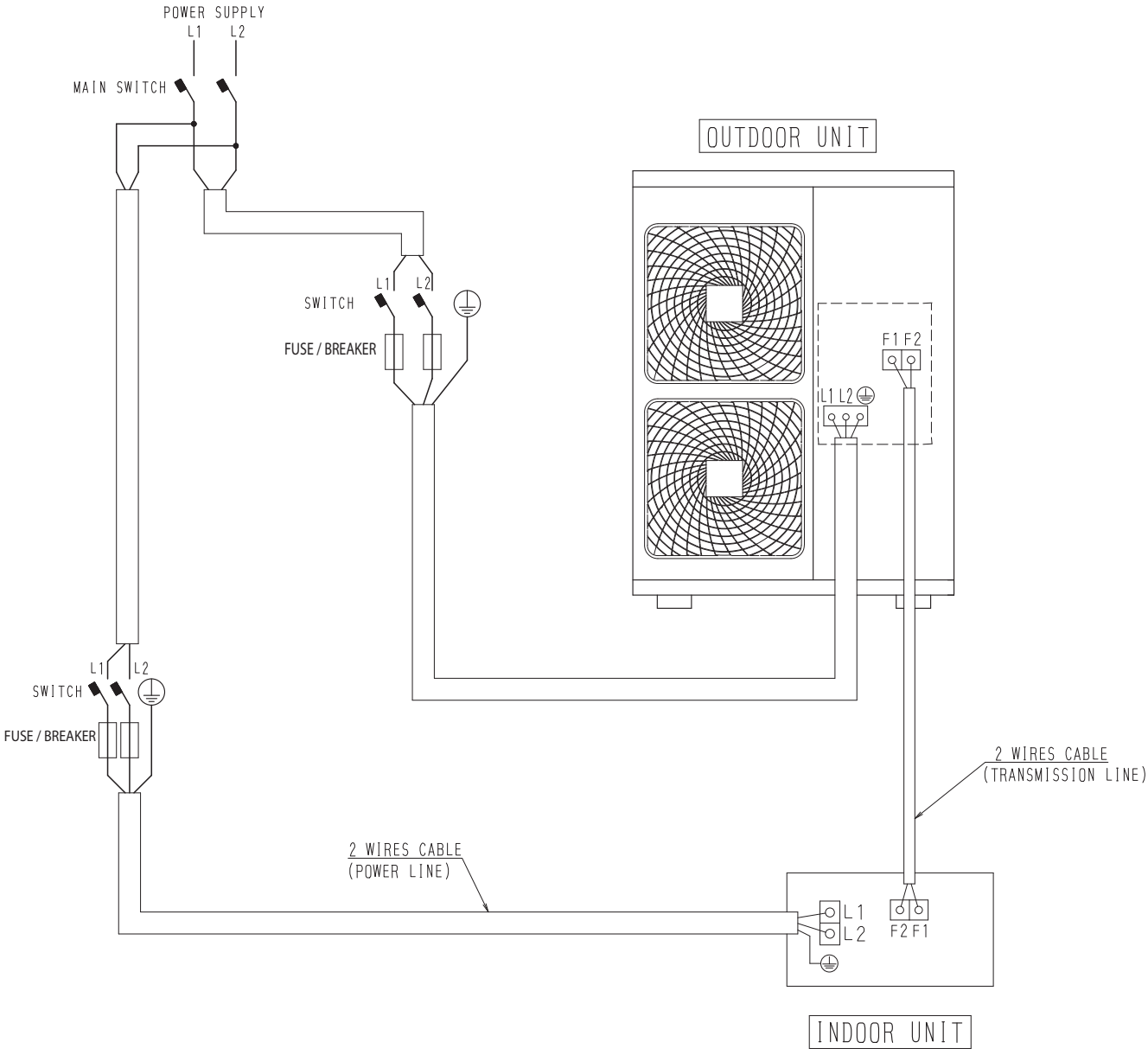
RZR36PVJU / RZR42PVJU
RZQ36PVJU9 / RZQ42PVJU9



Notes
1) All wiring, components and materials to be procured on the site must comply with the applicable local and national codes.
2) Use copper conductors only.
3) As for details, see wiring diagram.
4) Install circuit breaker for safety.
5) All field wiring and components must be provided by licensed electrician.
6) Unit shall be grounded in compliance with the applicable local and national codes.
7) Wiring shown is general points-of-connection guides only and is not intended for or to include all details for a specific installation.
8) Be sure to install the switch and the fuse to the power line of each equipment.
9) Install the main switch that can interrupt all the power sources in an integrated manner because this system consists of the equipment utilizing the multiple power sources.

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7. Electrical characteristics

7.1 Indoor unit

FCQ18PVJU / FCQ24PVJU / FCQ30PVJU
FCQ36MVJU / FCQ42MVJU

Units					Power supply		IFM		Input(W)	
Model	Type	Hz	Volts	Voltage range	MCA	MFA	KW	FLA	Cooling	Heating
FCQ36M	VJ	60	208-230	MAX. 253 Min. 187	1.4	15	0.090	1.1	188	173
FCQ42M					1.4	15	0.090	1.1	208	193
FCQ18P					1.3	15	0.090	1.0	145	151
FCQ24P					1.3	15	0.090	1.0	145	151
FCQ30P					1.3	15	0.090	1.0	173	158

Symbols:

MCA : Min. Circuit Amps (A)
MFA : Max. Fuse Amps (See note 5)
KW : Fan Motor Rated Output(kW)
FLA : Full Load Amps(A)
IFM : Indoor Fan Motor

Note:

1. Voltage range

   Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.

2. Maximum allowable voltage unbalance between phases is 2%.

3. MCA/MFA

   MCA = 1.25 X FLA

   MFA ≦ 4 X FLA
   (Next lower standard fuse rating. Min. 15A)

4. Select wire size based on the MCA.

5. Either a fuse or a circuit breaker is acceptable.

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FHQ18PVJU / FHQ24PVJU / FHQ30PVJU
FHQ36MVJU / FHQ42MVJU

Units					Power supply		IFM		Input(W)	
Model	Type	Hz	Volts	Voltage range	MCA	MFA	KW	FLA	Cooling	Heating
FHQ36M	VJ	60	208-230	MAX. 253 Min. 187	1.4	15	0.130	1.1	161	161
FHQ42M					1.4	15	0.130	1.1	165	165
FHQ18P					1.3	15	0.130	1.0	140	140
FHQ24P					1.3	15	0.130	1.0	140	140
FHQ30P					1.3	15	0.130	1.0	140	140

Symbols:

MCA : Min. Circuit Amps (A)
MFA : Max. Fuse Amps (See note 5)
KW : Fan Motor Rated Output(kW)
FLA : Full Load Amps(A)
IFM : Indoor Fan Motor

Note:

1. Voltage range

   Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.

2. Maximum allowable voltage unbalance between phases is 2%.

3. MCA/MFA

   MCA = 1.25 X FLA

   MFA ≦ 4 X FLA

   (Next lower standard fuse rating. Min.15A)

4. Select wire size based on the MCA.

5. Either a fuse or a circuit breaker is acceptable.

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FAQ18PVJU / FAQ24PVJU

Units					Power supply		IFM		Input(W)	
Model	Type	Hz	Volts	Voltage range	MCA	MFA	kW	FLA	Cooling	Heating
FAQ18P	VJ	60	208-230	MAX. 253	0.4	15	0.043	0.3	27	32
FAQ24P				Min. 187	0.6	15	0.043	0.5	50	60

Symbols:

MCA : Min. Circuit Amps (A)
MFA : Max. Fuse Amps (See note 5)
kW : Fan Motor Rated Output(kW)
FLA : Full Load Amps(A)
IFM : Indoor Fan Motor

Note:

1. Voltage range
   Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.
2. Maximum allowable voltage unbalance between phases is 2%.
3. MCA/MFA
   MCA = 1.25 X FLA
   MFA ≦ 4 X FLA
   (Next lower standard fuse rating. Min. 15A)
4. Select wire size based on the MCA.
5. Either a fuse or a circuit breaker is acceptable.

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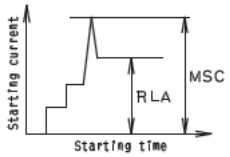
7.2 Outdoor unit

RZR18PVJU / RZR24PVJU / RZR30PVJU
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU

Model		Units				Power Supply		Comp.		OFM	
Outdoor	H/P C/O	Hz	Volts	Min.	Max	MCA	MOP	MSC	RLA	W	FLA
RZQ18PVJU9	H/P	60	208	187	229	16.5	20	_	7.1	70	0.3
			230	209	253						
RZQ24PVJU9	H/P	60	208	187	229	16.5	20	_	10.3	70	0.3
			230	209	253						
RZQ30PVJU	H/P	60	208	187	229	16.5	20	_	16.0	70	0.3
			230	209	253						
RZR18PVJU	C/O	60	208	187	229	16.5	20	_	7.1	70	0.3
			230	209	253						
RZR24PVJU	C/O	60	208	187	229	16.5	20	_	10.3	70	0.3
			230	209	253						
RZR30PVJU	C/O	60	208	187	229	16.5	20	_	16.0	70	0.3
			230	209	253						

The relationship between the starting time and the starting current:



NOTES:

1. RLA is based on the following conditions:
   Power supply: 60 Hz, 208V-230V
   Cooling:
   Indoor temp: 80° FDB / 67° FWB,
   Outdoor temp: 95° FDB
   Heating:
   Indoor temp: 70° FDB
   Outdoor temp: 47° FDB / 43° FWB
2. Voltage range:
   Units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.
3. Maximum allowable voltage variation between phases is 2%.
4. MCA represents maximum input current.
5. MOP represents capacity which may accept MCA.
6. Select wire size bsed on the value of MCA.
7. MOP is used to select the fuse, circuit breaker, or the ground fault circuit interrupter (ground leakage circuit breaker).

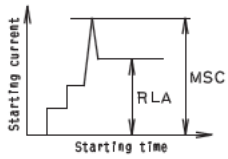
SYMBOLS:

MCA : Min. Circuit Amps. (A)
MOP: Max. Overcurrent Protective Device (Note 7)(A)
MSC: Max current during compressor startup. (A)
RLA: Rated Load Amps. (A)
OFM: Outdoor Fan Motor (A)
FLA: Full Load Amps (A)
kW: Fan Motor Rated Output (kW)

RZR36PVJU / RZR42PVJU
RZQ36PVJU9 / RZQ42PVJU9

Model		Units				Power Supply		Comp.		OFM	
Outdoor	H/P C/O	Hz	Volts	Min.	Max	MCA	MOP	MSC	RLA	KW	FLA
RZQ36PVJU9	H/P	60	208/230	187	253	27.0	30	–	18.6	0.070 + 0.070	0.3 +0.3
RZQ42PVJU9	H/P	60	208/230	187	253	27.0	30	–	19.6	0.070 + 0.070	0.3 +0.3
RZR36PVJU	C/O	60	208/230	187	253	27.0	30	–	18.6	0.070 + 0.070	0.3 +0.3
RZR42PVJU	C/O	60	208/230	187	253	27.0	30	–	19.6	0.070 + 0.070	0.3 +0.3

The relationship between the starting time and the starting current:



NOTES:

1. RLA is based on the following conditions:
   Power supply: 60 Hz, 208V-230V
   Cooling:
   Indoor temp: 80˚ FDB/67˚ FWB,
   Outdoor temp: 95˚ FDB
   Heating:
   Indoor temp: 70˚ FDB
   Outdoor temp: 47˚ FDB/43˚ FWB
2. Voltage range:
   Units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.
3. Maximum allowable voltage variation between phases is 2%.
4. MCA represents maximum input current.
5. MOP represents capacity which may accept MCA.
6. Select wire size bsed on the value of MCA.
7. MOP is used to select the fuse, circuit breaker, or the ground fault circuit interrupter (ground leakage circuit breaker).

SYMBOLS:

MCA: Minimum Circuit Amps. (A)
MOP: Maximum Overcurrent Protective Device (A) (See Note 6)
MSC: Maximum current when starting the compressor. (A)
RLA: Rate Load Amps (A)
OFM: Outdoor Fan Motor (A)
FLA: Full Load Amps (A)
KW: Fan Motor Rated Output

8. Safety devices list

8.1 FCQ

FCQ18PVJU / FCQ24PVJU / FCQ30PVJU

MODEL NAME	SAFETY DEVICES	UNITS	18	24	30
FCQ～PVJU	PC board fuse		250V 5A	250V 5A	250V 5A
	Fan motor thermal fuse	°F	—	—	—
	Fan motor thermal protector	°F	OFF:266±9 ON:176±36	OFF:266±9 ON:176±36	OFF:266±9 ON:176±36
	Drain pump thermal fuse	°F	293	293	293

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FCQ36MVJU / FCQ42MVJU

MODEL NAME	SAFETY DEVICES	UNITS	36	42
FCQ～MVJU	PC board fuse		250V 5A	250V 5A
	Fan motor thermal fuse	°F	—	—
	Fan motor thermal protector	°F	OFF:266±9 ON:176±36	OFF:266±9 ON:176±36
	Drain pump thermal fuse	°F	293	293

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8.2 FHQ

FHQ18PVJU / FHQ24PVJU / FHQ30PVJU

MODEL NAME	SAFETY DEVICES	UNITS	18	24	30
FHQ～PVJU	PC board fuse		250V 5A	250V 5A	250V 5A
	Fan motor thermal fuse	°F	—	—	—
	Fan motor thermal protector	°F	OFF:266±9 ON:176±36	OFF:266±9 ON:176±36	OFF:266±9 ON:176±36

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FHQ36MVJU / FHQ42MVJU

MODEL NAME	SAFETY DEVICES	UNITS	36	42
FHQ～MVJU	PC board fuse		250V 5A	250V 5A
	Fan motor thermal fuse	°F	—	—
	Fan motor thermal protector	°F	OFF:266±9 ON:176±36	OFF:266±9 ON:176±36

3D049334A

8.3 FAQ

FAQ18PVJU / FAQ24PVJU

	Safety devices		18	24
FAQ～PVJU	PC board fuse		250V 3.15A	
	Fan motor thermal fuse	°F	———	
	Fan motor thermal protector	°F	———	

4D047085B

9. Capacity tables

9.1 Cooling Only

9.1.1 FCQ

FCQ18PVJU + RZR18PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
EDB(°FDB)	EWB(°FWB)	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	11.68	10.3	0.63	11.68	10.3	0.67	11.68	10.3	0.76	11.68	10.3	0.81	11.68	10.3	0.86	11.68	10.3	0.98
72.0	61.0	14.21	11.1	0.74	14.21	11.1	0.83	14.21	11.1	0.95	14.21	11.1	1.01	14.21	11.1	1.08	14.21	11.1	1.24
77.0	64.0	16.10	11.9	0.83	16.10	11.9	0.96	16.10	11.9	1.10	16.10	11.9	1.17	16.10	11.9	1.27	16.10	11.9	1.46
80.0	67.0	18.00	12.8	0.95	18.00	12.8	1.10	18.00	12.8	1.27	18.00	12.8	1.36	18.00	12.8	1.47	17.27	12.8	1.59
86.0	72.0	20.79	13.6	1.14	20.06	13.4	1.25	19.32	13.1	1.37	19.00	13.0	1.42	18.59	12.9	1.49	17.86	12.7	1.61
90.0	75.0	21.14	13.6	1.14	20.41	13.3	1.26	19.68	13.1	1.38	19.35	12.9	1.43	18.95	12.8	1.50	18.21	12.8	1.62

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FCQ24PVJU + RZR24PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
EDB(°FDB)	EWB(°FWB)	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	15.57	13.6	0.88	15.57	13.6	0.95	15.57	13.6	1.08	15.57	13.6	1.15	15.57	13.6	1.24	15.57	13.6	1.41
72.0	61.0	18.94	15.9	1.05	18.94	15.9	1.18	18.94	15.9	1.37	18.94	15.9	1.45	18.94	15.9	1.57	18.94	15.9	1.81
77.0	64.0	21.47	16.9	1.19	21.47	16.9	1.38	21.47	16.9	1.60	21.47	16.9	1.71	21.47	16.9	1.85	21.47	16.9	2.14
80.0	67.0	24.00	18.7	1.37	24.00	18.7	1.60	24.00	18.7	1.86	24.00	18.7	1.99	24.00	18.7	2.16	23.02	17.9	2.34
86.0	72.0	27.72	19.9	1.65	26.74	19.2	1.83	25.76	18.6	2.01	25.33	18.2	2.09	24.79	17.9	2.18	23.81	17.2	2.37
90.0	75.0	28.19	18.3	1.66	27.21	17.7	1.84	26.24	17.0	2.02	25.80	16.8	2.10	25.26	16.5	2.20	24.29	15.8	2.38

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FCQ30PVJU + RZR30PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
EDB(°FDB)	EWB(°FWB)	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	19.47	16.8	1.24	19.47	16.8	1.35	19.47	16.8	1.55	19.47	16.8	1.64	19.47	16.8	1.77	19.47	16.8	2.03
72.0	61.0	23.68	20.1	1.50	23.68	20.1	1.69	23.68	20.1	1.96	23.68	20.1	2.09	23.68	20.1	2.26	23.68	20.1	2.61
77.0	64.0	26.84	21.2	1.71	26.84	21.2	1.99	26.84	21.2	2.31	26.84	21.2	2.47	26.84	21.2	2.68	26.84	21.2	3.11
80.0	67.0	30.00	23.1	1.97	30.00	23.1	2.31	30.00	23.1	2.69	30.00	23.1	2.88	30.00	23.1	3.13	28.78	22.1	3.39
86.0	72.0	34.65	24.4	2.39	33.43	23.7	2.64	32.21	22.9	2.91	31.66	22.5	3.02	30.99	22.1	3.17	29.77	21.2	3.43
90.0	75.0	35.24	22.2	2.40	34.02	21.4	2.66	32.80	20.7	2.92	32.25	20.4	3.04	31.58	19.9	3.19	30.36	19.2	3.46

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. [ ] shows nominal MAX capacities

FCQ36MVJU + RZR36PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB											
		68		77		86		90		95		104	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	EWB(°FWB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
68.0	57.0	23.4	1.56	23.4	1.69	23.4	1.94	23.4	2.07	23.4	2.23	23.4	2.56
72.0	61.0	28.4	1.89	28.4	2.13	28.4	2.47	28.4	2.64	28.4	2.86	28.4	3.31
77.0	64.0	32.2	2.15	32.2	2.51	32.2	2.92	32.2	3.12	32.2	3.39	32.2	3.94
80.0	67.0	36.0	2.48	36.0	2.91	36.0	3.41	36.0	3.65	36.0	3.97	34.5	4.30
86.0	72.0	41.6	3.02	40.1	3.35	38.6	3.68	38.0	3.83	37.2	4.02	35.7	4.36
90.0	75.0	42.3	3.03	40.8	3.37	39.4	3.70	38.7	3.85	37.9	4.04	36.4	4.39

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. [ ] shows nominal MAX capacities

FCQ42MVJU + RZR42PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB											
		68		77		86		90		95		104	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	EWB(°FWB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
68.0	57.0	26.3	1.94	26.3	2.11	26.3	2.44	26.3	2.59	26.3	2.80	26.3	3.22
72.0	61.0	32.0	2.36	32.0	2.68	32.0	3.11	32.0	3.32	32.0	3.60	32.0	4.17
77.0	64.0	36.2	2.70	36.2	3.15	36.2	3.68	36.2	3.93	36.2	4.28	36.2	4.97
80.0	67.0	40.5	3.12	40.5	3.67	40.5	4.29	40.5	4.60	40.5	5.01	38.9	5.43
86.0	72.0	46.8	3.80	45.1	4.22	43.5	4.64	42.7	4.83	41.8	5.07	40.2	5.50
90.0	75.0	47.6	3.82	45.9	4.24	44.3	4.67	43.5	4.86	42.6	5.10	41.0	5.54

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. [ ] shows nominal MAX capacities

9.1.2 FHQ

FHQ18PVJU + RZR18PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
EDB(°FDB)	EWB(°FWB)	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	11.68	10.6	0.61	11.68	10.6	0.65	11.68	10.6	0.74	11.68	10.6	0.78	11.68	10.6	0.84	11.68	10.6	0.95
72.0	61.0	14.21	11.9	0.58	14.21	11.9	0.80	14.21	11.9	0.92	14.21	11.9	0.98	14.21	11.9	1.05	14.21	11.9	1.20
77.0	64.0	16.10	12.7	0.67	16.10	12.7	0.93	16.10	12.7	1.07	16.10	12.7	1.14	16.10	12.7	1.23	16.10	12.7	1.42
80.0	67.0	18.00	13.3	0.78	18.00	13.3	1.07	18.00	13.3	1.24	18.00	13.3	1.32	18.00	13.3	1.43	17.27	13.3	1.54
86.0	72.0	20.79	14.2	0.96	20.06	14.0	1.22	19.32	13.2	1.33	19.00	13.3	1.38	18.59	13.2	1.45	17.86	12.7	1.56
90.0	75.0	21.14	13.5	0.97	20.41	13.2	1.22	19.68	12.7	1.34	19.35	12.8	1.39	18.95	12.5	1.45	18.21	12.2	1.57

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FHQ24PVJU + RZR24PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
EDB(°FDB)	EWB(°FWB)	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	15.57	12.6	0.83	15.57	12.6	0.90	15.57	12.6	1.03	15.57	12.6	1.09	15.57	12.6	1.17	15.57	12.6	1.34
72.0	61.0	18.94	14.9	1.00	18.94	14.9	1.12	18.94	14.9	1.29	18.94	14.9	1.38	18.94	14.9	1.49	18.94	14.9	1.72
77.0	64.0	21.47	16.3	1.13	21.47	16.3	1.31	21.47	16.3	1.52	21.47	16.3	1.62	21.47	16.3	1.76	21.47	16.3	2.03
80.0	67.0	24.00	17.1	1.30	24.00	17.1	1.52	24.00	17.1	1.76	24.00	17.1	1.89	24.00	17.1	2.05	23.02	16.4	2.22
86.0	72.0	27.72	17.5	1.57	26.74	16.9	1.73	25.76	16.5	1.90	25.33	16.2	1.98	24.79	16.1	2.07	23.81	15.5	2.24
90.0	75.0	28.19	16.9	1.58	27.21	16.3	1.75	26.24	15.7	1.91	25.80	15.5	1.99	25.26	15.2	2.09	24.29	14.6	2.26

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FHQ30PVJU + RZR30PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
EDB(°FDB)	EWB(°FWB)	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	19.47	15.6	1.15	19.47	15.6	1.25	19.47	15.6	1.44	19.47	15.6	1.53	19.47	15.6	1.65	19.47	15.6	1.90
72.0	61.0	23.68	18.5	1.40	23.68	18.5	1.58	23.68	18.5	1.83	23.68	18.5	1.95	23.68	18.5	2.12	23.68	18.5	2.45
77.0	64.0	26.84	19.9	1.59	26.84	19.9	1.86	26.84	19.9	2.16	26.84	19.9	2.31	26.84	19.9	2.51	26.84	19.9	2.91
80.0	67.0	30.00	21.1	1.84	30.00	21.1	2.16	30.00	21.1	2.52	30.00	21.1	2.70	30.00	21.1	2.94	28.78	20.2	3.19
86.0	72.0	34.65	21.8	2.23	33.43	21.0	2.48	32.21	20.6	2.72	31.66	20.3	2.83	30.99	20.2	2.97	29.77	19.4	3.23
90.0	75.0	35.24	21.1	2.25	34.02	20.4	2.49	32.80	19.7	2.74	32.25	19.4	2.85	31.58	18.9	2.99	30.36	18.3	3.25

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FHQ36MVJU + RZR36PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB											
		68		77		86		90		95		104	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	EWB(°FWB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
68.0	57.0	23.4	1.40	23.4	1.52	23.4	1.76	23.4	1.87	23.4	2.02	23.4	2.32
72.0	61.0	28.4	1.70	28.4	1.93	28.4	2.24	28.4	2.39	28.4	2.59	28.4	3.00
77.0	64.0	32.2	1.94	32.2	2.27	32.2	2.64	32.2	2.83	32.2	3.07	32.2	3.57
80.0	67.0	36.0	2.25	36.0	2.64	36.0	3.09	36.0	3.31	36.0	3.60	34.5	3.90
86.0	72.0	41.6	2.73	40.1	3.03	38.6	3.34	38.0	3.47	37.2	3.64	35.7	3.95
90.0	75.0	42.3	2.75	40.8	3.05	39.4	3.36	38.7	3.49	37.9	3.67	36.4	3.98

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FHQ42MVJU + RZR42PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB											
		68		77		86		90		95		104	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	EWB(°FWB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
68.0	57.0	26.3	1.66	26.3	1.81	26.3	2.09	26.3	2.22	26.3	2.40	26.3	2.76
72.0	61.0	32.0	2.02	32.0	2.29	32.0	2.67	32.0	2.85	32.0	3.09	32.0	3.58
77.0	64.0	36.2	2.31	36.2	2.70	36.2	3.15	36.2	3.37	36.2	3.67	36.2	4.26
80.0	67.0	40.5	2.67	40.5	3.15	40.5	3.68	40.5	3.95	40.5	4.30	38.9	4.66
86.0	72.0	46.8	3.26	45.1	3.62	43.5	3.98	42.7	4.14	41.8	4.35	40.2	4.72
90.0	75.0	47.6	3.28	45.9	3.64	44.3	4.01	43.5	4.17	42.6	4.38	41.0	4.75

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

9.1.3 FAQ

FAQ18PVJU + RZR18PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
EDB(°FDB)	EWB(°FWB)	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	11.68	8.9	0.60	11.68	8.9	0.66	11.68	8.9	0.76	11.68	8.9	0.81	11.68	8.9	0.88	11.68	8.9	1.01
72.0	61.0	14.21	11.7	0.74	14.21	11.7	0.84	14.21	11.7	0.97	14.21	11.7	1.04	14.21	11.7	1.13	14.21	11.7	1.31
77.0	64.0	16.10	12.7	0.84	16.10	12.7	0.99	16.10	12.7	1.15	16.10	12.7	1.24	16.10	12.7	1.35	16.10	12.7	1.57
80.0	67.0	18.00	13.7	0.98	18.00	13.7	1.15	18.00	13.7	1.35	18.00	13.7	1.45	18.00	13.7	1.58	17.27	13.7	1.72
86.0	72.0	20.79	14.1	1.19	20.06	14.1	1.33	19.32	14.1	1.46	19.00	14.1	1.52	18.59	14.1	1.60	17.86	14.1	1.74
90.0	75.0	21.14	12.8	1.20	20.41	12.8	1.34	19.68	12.8	1.47	19.35	12.8	1.53	18.95	12.8	1.61	18.21	12.8	1.75

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FAQ24PVJU + RZR24PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
EDB(°FDB)	EWB(°FWB)	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	15.57	14.3	0.96	15.57	14.3	1.05	15.57	14.3	1.21	15.57	14.3	1.30	15.57	14.3	1.41	15.57	14.3	1.62
72.0	61.0	18.94	15.3	1.18	18.94	15.3	1.34	18.94	15.3	1.57	18.94	15.3	1.68	18.94	15.3	1.82	18.94	15.3	2.12
77.0	64.0	21.47	16.5	1.35	21.47	16.5	1.59	21.47	16.5	1.86	21.47	16.5	2.00	21.47	16.5	2.18	21.47	16.5	2.54
80.0	67.0	24.00	18.0	1.57	24.00	18.0	1.86	24.00	18.0	2.19	24.00	18.0	2.35	24.00	18.0	2.56	23.02	18.0	2.78
86.0	72.0	27.72	18.8	1.93	26.74	18.4	2.15	25.76	18.0	2.37	25.33	17.8	2.47	24.79	17.6	2.59	23.81	17.2	2.82
90.0	75.0	28.19	17.5	1.94	27.21	17.0	2.16	26.24	16.6	2.38	25.80	16.4	2.48	25.26	16.2	2.61	24.29	15.7	2.84

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

9.2 Heat Pump

9.2.1 FCQ

FCQ18PVJU + RZQ18PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
EDB(°FDB)	EWB(°FWB)	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	11.68	10.3	0.63	11.68	10.3	0.67	11.68	10.3	0.76	11.68	10.3	0.81	11.68	10.3	0.86	11.68	10.3	0.98
72.0	61.0	14.21	11.1	0.74	14.21	11.1	0.83	14.21	11.1	0.95	14.21	11.1	1.01	14.21	11.1	1.08	14.21	11.1	1.24
77.0	64.0	16.10	11.9	0.83	16.10	11.9	0.96	16.10	11.9	1.10	16.10	11.9	1.17	16.10	11.9	1.27	16.10	11.9	1.46
80.0	67.0	18.00	12.8	0.95	18.00	12.8	1.10	18.00	12.8	1.27	18.00	12.8	1.36	18.00	12.8	1.47	17.27	12.8	1.59
86.0	72.0	20.79	13.6	1.14	20.06	13.4	1.25	19.32	13.1	1.37	19.00	13.0	1.42	18.59	12.9	1.49	17.86	12.7	1.61
90.0	75.0	21.14	13.6	1.14	20.41	13.3	1.26	19.68	13.1	1.38	19.35	12.9	1.43	18.95	12.8	1.50	18.21	12.8	1.62

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	23.33	2.80	23.33	2.47	23.33	2.10	23.33	1.85	23.33	1.72
64	22.22	2.64	22.22	2.33	22.22	1.98	22.22	1.75	22.22	1.63
68	20.74	2.42	20.74	2.15	20.74	1.83	20.74	1.62	20.74	1.51
70	20.00	2.32	20.00	2.06	20.00	1.76	20.00	1.56	20.00	1.46
72	19.26	2.21	19.26	1.97	19.26	1.69	19.26	1.50	19.26	1.40
75	18.15	2.06	18.15	1.84	18.15	1.58	18.15	1.41	18.15	1.32

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FCQ24PVJU + RZQ24PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
EDB(°FDB)	EWB(°FWB)	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	15.57	13.6	0.88	15.57	13.6	0.95	15.57	13.6	1.08	15.57	13.6	1.15	15.57	13.6	1.24	15.57	13.6	1.41
72.0	61.0	18.94	15.9	1.05	18.94	15.9	1.18	18.94	15.9	1.37	18.94	15.9	1.45	18.94	15.9	1.57	18.94	15.9	1.81
77.0	64.0	21.47	16.9	1.19	21.47	16.9	1.38	21.47	16.9	1.60	21.47	16.9	1.71	21.47	16.9	1.85	21.47	16.9	2.14
80.0	67.0	24.00	18.7	1.37	24.00	18.7	1.60	24.00	18.7	1.86	24.00	18.7	1.99	24.00	18.7	2.16	23.02	17.9	2.34
86.0	72.0	27.72	19.9	1.65	26.74	19.2	1.83	25.76	18.6	2.01	25.33	18.2	2.09	24.79	17.9	2.18	23.81	17.2	2.37
90.0	75.0	28.19	18.3	1.66	27.21	17.7	1.84	26.24	17.0	2.02	25.80	16.8	2.10	25.26	16.5	2.20	24.29	15.8	2.38

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	24.18	2.69	26.67	2.81	30.49	2.94	31.50	2.71	31.50	2.52
64	24.14	2.75	26.63	2.85	30.00	2.92	30.00	2.56	30.00	2.38
68	24.09	2.82	26.57	2.92	28.00	2.69	28.00	2.37	28.00	2.21
70	24.06	2.85	26.55	2.95	27.00	2.58	27.00	2.28	27.00	2.12
72	24.03	2.89	26.00	2.89	26.00	2.47	26.00	2.18	26.00	2.04
75	23.99	2.94	24.50	2.70	24.50	2.31	24.50	2.05	24.50	1.91

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FCQ30PVJU + RZQ30PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
EDB(°FDB)	EWB(°FWB)	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	19.47	16.8	1.24	19.47	16.8	1.35	19.47	16.8	1.55	19.47	16.8	1.64	19.47	16.8	1.77	19.47	16.8	2.03
72.0	61.0	23.68	20.1	1.50	23.68	20.1	1.69	23.68	20.1	1.96	23.68	20.1	2.09	23.68	20.1	2.26	23.68	20.1	2.61
77.0	64.0	26.84	21.2	1.71	26.84	21.2	1.99	26.84	21.2	2.31	26.84	21.2	2.47	26.84	21.2	2.68	26.84	21.2	3.11
80.0	67.0	30.00	23.1	1.97	30.00	23.1	2.31	30.00	23.1	2.69	30.00	23.1	2.88	30.00	23.1	3.13	28.78	22.1	3.39
86.0	72.0	34.65	24.4	2.39	33.43	23.7	2.64	32.21	22.9	2.91	31.66	22.5	3.02	30.99	22.1	3.17	29.77	21.2	3.43
90.0	75.0	35.24	22.2	2.40	34.02	21.4	2.66	32.80	20.7	2.92	32.25	20.4	3.04	31.58	19.9	3.19	30.36	19.2	3.46

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	24.41	2.72	26.89	2.89	30.72	3.09	34.22	3.24	36.45	3.32
64	24.36	2.80	26.84	2.96	30.66	3.16	34.17	3.30	36.40	3.38
68	24.29	2.91	26.77	3.06	30.59	3.24	34.10	3.38	35.26	3.30
70	24.25	2.96	26.74	3.11	30.56	3.29	34.00	3.41	34.00	3.17
72	24.22	3.02	26.70	3.16	30.53	3.33	32.74	3.26	32.74	3.04
75	24.17	3.10	26.65	3.23	30.47	3.39	30.85	3.06	30.85	2.85

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FCQ36MVJU + RZQ36PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB											
		68		77		86		90		95		104	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	EWB(°FWB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
68.0	57.0	23.4	1.56	23.4	1.69	23.4	1.94	23.4	2.07	23.4	2.23	23.4	2.56
72.0	61.0	28.4	1.89	28.4	2.13	28.4	2.47	28.4	2.64	28.4	2.86	28.4	3.31
77.0	64.0	32.2	2.15	32.2	2.51	32.2	2.92	32.2	3.12	32.2	3.39	32.2	3.94
80.0	67.0	36.0	2.48	36.0	2.91	36.0	3.41	36.0	3.65	36.0	3.97	34.5	4.30
86.0	72.0	41.6	3.02	40.1	3.35	38.6	3.68	38.0	3.83	37.2	4.02	35.7	4.36
90.0	75.0	42.3	3.03	40.8	3.37	39.4	3.70	38.7	3.85	37.9	4.04	36.4	4.39

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	30.1	3.55	33.5	3.77	37.0	3.95	41.2	4.13	43.9	4.23
64	30.0	3.64	33.5	3.85	36.9	4.03	41.2	4.20	43.8	4.29
68	29.9	3.77	33.4	3.97	36.9	4.13	41.0	4.27	41.0	3.98
70	29.9	3.83	33.4	4.03	36.8	4.18	39.5	4.10	39.5	3.82
72	29.9	3.90	33.3	4.08	36.8	4.23	38.0	3.93	38.0	3.66
75	29.8	3.99	33.3	4.17	35.8	4.16	35.8	3.68	35.8	3.43

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FCQ42MVJU + RZQ42PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB											
		68		77		86		90		95		104	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	EWB(°FWB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
68.0	57.0	26.3	1.94	26.3	2.11	26.3	2.44	26.3	2.59	26.3	2.80	26.3	3.22
72.0	61.0	32.0	2.36	32.0	2.68	32.0	3.11	32.0	3.32	32.0	3.60	32.0	4.17
77.0	64.0	36.2	2.70	36.2	3.15	36.2	3.68	36.2	3.93	36.2	4.28	36.2	4.97
80.0	67.0	40.5	3.12	40.5	3.67	40.5	4.29	40.5	4.60	40.5	5.01	38.9	5.43
86.0	72.0	46.8	3.80	45.1	4.22	43.5	4.64	42.7	4.83	41.8	5.07	40.2	5.50
90.0	75.0	47.6	3.82	45.9	4.24	44.3	4.67	43.5	4.86	42.6	5.10	41.0	5.54

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	30.5	3.53	34.0	3.77	37.5	3.96	41.8	4.15	44.5	4.26
64	30.4	3.64	33.9	3.86	37.4	4.04	41.7	4.23	44.4	4.32
68	30.3	3.77	33.8	3.98	37.3	4.15	41.6	4.32	43.0	4.23
70	30.3	3.84	33.8	4.04	37.3	4.21	41.5	4.36	41.5	4.06
72	30.3	3.91	33.8	4.10	37.3	4.26	40.0	4.18	40.0	3.89
75	30.2	4.01	33.7	4.19	37.2	4.34	37.7	3.91	37.7	3.65

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

9.2.2 FHQ

FHQ18PVJU + RZQ18PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
EDB(°FDB)	EWB(°FWB)	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	11.68	10.6	0.61	11.68	10.6	0.65	11.68	10.6	0.74	11.68	10.6	0.78	11.68	10.6	0.84	11.68	10.6	0.95
72.0	61.0	14.21	11.9	0.58	14.21	11.9	0.80	14.21	11.9	0.92	14.21	11.9	0.98	14.21	11.9	1.05	14.21	11.9	1.20
77.0	64.0	16.10	12.7	0.67	16.10	12.7	0.93	16.10	12.7	1.07	16.10	12.7	1.14	16.10	12.7	1.23	16.10	12.7	1.42
80.0	67.0	18.00	13.3	0.78	18.00	13.3	1.07	18.00	13.3	1.24	18.00	13.3	1.32	18.00	13.3	1.43	17.27	13.3	1.54
86.0	72.0	20.79	14.2	0.96	20.06	14.0	1.22	19.32	13.2	1.33	19.00	13.3	1.38	18.59	13.2	1.45	17.86	12.7	1.56
90.0	75.0	21.14	13.5	0.97	20.41	13.2	1.22	19.68	12.7	1.34	19.35	12.8	1.39	18.95	12.5	1.45	18.21	12.2	1.57

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	23.33	2.77	23.33	2.45	23.33	2.07	23.33	1.82	23.33	1.70
64	22.22	2.61	22.22	2.30	22.22	1.96	22.22	1.73	22.22	1.61
68	20.74	2.39	20.74	2.12	20.74	1.81	20.74	1.60	20.74	1.49
70	20.00	2.29	20.00	2.03	20.00	1.74	20.00	1.54	20.00	1.44
72	19.26	2.19	19.26	1.94	19.26	1.66	19.26	1.48	19.26	1.38
75	18.15	2.04	18.15	1.81	18.15	1.56	18.15	1.39	18.15	1.30

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FHQ24PVJU + RZQ24PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
EDB(°FDB)	EWB(°FWB)	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	15.57	12.6	0.83	15.57	12.6	0.90	15.57	12.6	1.03	15.57	12.6	1.09	15.57	12.6	1.17	15.57	12.6	1.34
72.0	61.0	18.94	14.9	1.00	18.94	14.9	1.12	18.94	14.9	1.29	18.94	14.9	1.38	18.94	14.9	1.49	18.94	14.9	1.72
77.0	64.0	21.47	16.3	1.13	21.47	16.3	1.31	21.47	16.3	1.52	21.47	16.3	1.62	21.47	16.3	1.76	21.47	16.3	2.03
80.0	67.0	24.00	17.1	1.30	24.00	17.1	1.52	24.00	17.1	1.76	24.00	17.1	1.89	24.00	17.1	2.05	23.02	16.4	2.22
86.0	72.0	27.72	17.5	1.57	26.74	16.9	1.73	25.76	16.5	1.90	25.33	16.2	1.98	24.79	16.1	2.07	23.81	15.5	2.24
90.0	75.0	28.19	16.9	1.58	27.21	16.3	1.75	26.24	15.7	1.91	25.80	15.5	1.99	25.26	15.2	2.09	24.29	14.6	2.26

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	24.18	2.78	26.67	2.89	30.49	3.03	31.50	2.80	31.50	2.60
64	24.14	2.83	26.63	2.94	30.00	3.01	30.00	2.64	30.00	2.46
68	24.09	2.90	26.57	3.01	28.00	2.77	28.00	2.44	28.00	2.27
70	24.06	2.94	26.55	3.04	27.00	2.66	27.00	2.34	27.00	2.19
72	24.03	2.98	26.00	2.98	26.00	2.54	26.00	2.25	26.00	2.10
75	23.99	3.03	24.50	2.78	24.50	2.38	24.50	2.11	24.50	1.97

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FHQ30PVJU + RZQ30PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
EDB(°FDB)	EWB(°FWB)	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	19.47	15.6	1.15	19.47	15.6	1.25	19.47	15.6	1.44	19.47	15.6	1.53	19.47	15.6	1.65	19.47	15.6	1.90
72.0	61.0	23.68	18.5	1.40	23.68	18.5	1.58	23.68	18.5	1.83	23.68	18.5	1.95	23.68	18.5	2.12	23.68	18.5	2.45
77.0	64.0	26.84	19.9	1.59	26.84	19.9	1.86	26.84	19.9	2.16	26.84	19.9	2.31	26.84	19.9	2.51	26.84	19.9	2.91
80.0	67.0	30.00	21.1	1.84	30.00	21.1	2.16	30.00	21.1	2.52	30.00	21.1	2.70	30.00	21.1	2.94	28.78	20.2	3.19
86.0	72.0	34.65	21.8	2.23	33.43	21.0	2.48	32.21	20.6	2.72	31.66	20.3	2.83	30.99	20.2	2.97	29.77	19.4	3.23
90.0	75.0	35.24	21.1	2.25	34.02	20.4	2.49	32.80	19.7	2.74	32.25	19.4	2.85	31.58	18.9	2.99	30.36	18.3	3.25

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	24.41	2.97	26.89	3.16	30.72	3.39	34.22	3.55	36.45	3.64
64	24.36	3.06	26.84	3.24	30.66	3.46	34.17	3.62	36.40	3.70
68	24.29	3.18	26.77	3.35	30.59	3.55	34.10	3.70	35.26	3.62
70	24.25	3.24	26.74	3.40	30.56	3.60	34.00	3.73	34.00	3.47
72	24.22	3.30	26.70	3.46	30.53	3.65	32.74	3.57	32.74	3.33
75	24.17	3.39	26.65	3.54	30.47	3.72	30.85	3.34	30.85	3.12

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FHQ36MVJU + RZQ36PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB											
		68		77		86		90		95		104	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	EWB(°FWB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
68.0	57.0	23.4	1.40	23.4	1.52	23.4	1.76	23.4	1.87	23.4	2.02	23.4	2.32
72.0	61.0	28.4	1.70	28.4	1.93	28.4	2.24	28.4	2.39	28.4	2.59	28.4	3.00
77.0	64.0	32.2	1.94	32.2	2.27	32.2	2.64	32.2	2.83	32.2	3.07	32.2	3.57
80.0	67.0	36.0	2.25	36.0	2.64	36.0	3.09	36.0	3.31	36.0	3.60	34.5	3.90
86.0	72.0	41.6	2.73	40.1	3.03	38.6	3.34	38.0	3.47	37.2	3.64	35.7	3.95
90.0	75.0	42.3	2.75	40.8	3.05	39.4	3.36	38.7	3.49	37.9	3.67	36.4	3.98

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	28.6	3.56	31.9	3.78	35.2	3.96	39.2	4.14	41.8	4.24
64	28.6	3.65	31.8	3.86	35.1	4.04	39.1	4.21	41.7	4.30
68	28.5	3.78	31.8	3.98	35.1	4.14	38.9	4.28	38.9	3.97
70	28.4	3.84	31.7	4.04	35.0	4.19	37.5	4.10	37.5	3.81
72	28.4	3.91	31.7	4.09	35.0	4.25	36.1	3.93	36.1	3.66
75	28.3	4.00	31.6	4.18	34.0	4.16	34.0	3.68	34.0	3.43

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FHQ42MVJU + RZQ42PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB											
		68		77		86		90		95		104	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	EWB(°FWB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
68.0	57.0	26.3	1.66	26.3	1.81	26.3	2.09	26.3	2.22	26.3	2.40	26.3	2.76
72.0	61.0	32.0	2.02	32.0	2.29	32.0	2.67	32.0	2.85	32.0	3.09	32.0	3.58
77.0	64.0	36.2	2.31	36.2	2.70	36.2	3.15	36.2	3.37	36.2	3.67	36.2	4.26
80.0	67.0	40.5	2.67	40.5	3.15	40.5	3.68	40.5	3.95	40.5	4.30	38.9	4.66
86.0	72.0	46.8	3.26	45.1	3.62	43.5	3.98	42.7	4.14	41.8	4.35	40.2	4.72
90.0	75.0	47.6	3.28	45.9	3.64	44.3	4.01	43.5	4.17	42.6	4.38	41.0	4.75

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	29.0	3.48	32.4	3.71	35.7	3.90	39.8	4.09	42.3	4.20
64	29.0	3.58	32.3	3.80	35.6	3.98	39.7	4.17	42.3	4.26
68	28.9	3.71	32.2	3.92	35.5	4.09	39.6	4.26	41.0	4.17
70	28.8	3.78	32.2	3.98	35.5	4.15	39.5	4.30	39.5	4.00
72	28.8	3.85	32.1	4.04	35.5	4.20	38.0	4.12	38.0	3.84
75	28.7	3.95	32.1	4.13	35.4	4.28	35.8	3.85	35.8	3.59

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

9.2.3 FAQ

FAQ18PVJU + RZQ18PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
EDB(°FDB)	EWB(°FWB)	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	11.68	8.9	0.60	11.68	8.9	0.66	11.68	8.9	0.76	11.68	8.9	0.81	11.68	8.9	0.88	11.68	8.9	1.01
72.0	61.0	14.21	11.7	0.74	14.21	11.7	0.84	14.21	11.7	0.97	14.21	11.7	1.04	14.21	11.7	1.13	14.21	11.7	1.31
77.0	64.0	16.10	12.7	0.84	16.10	12.7	0.99	16.10	12.7	1.15	16.10	12.7	1.24	16.10	12.7	1.35	16.10	12.7	1.57
80.0	67.0	18.00	13.7	0.98	18.00	13.7	1.15	18.00	13.7	1.35	18.00	13.7	1.45	18.00	13.7	1.58	17.27	13.7	1.72
86.0	72.0	20.79	14.1	1.19	20.06	14.1	1.33	19.32	14.1	1.46	19.00	14.1	1.52	18.59	14.1	1.60	17.86	14.1	1.74
90.0	75.0	21.14	12.8	1.20	20.41	12.8	1.34	19.68	12.8	1.47	19.35	12.8	1.53	18.95	12.8	1.61	18.21	12.8	1.75

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	23.33	3.59	23.33	3.15	23.33	2.65	23.33	2.31	23.33	2.14
64	22.22	3.36	22.22	2.96	22.22	2.49	22.22	2.18	22.22	2.02
68	20.74	3.08	20.74	2.71	20.74	2.29	20.74	2.01	20.74	1.87
70	20.00	2.94	20.00	2.59	20.00	2.19	20.00	1.93	20.00	1.79
72	19.26	2.80	19.26	2.47	19.26	2.10	19.26	1.84	19.26	1.71
75	18.15	2.60	18.15	2.30	18.15	1.95	18.15	1.72	18.15	1.60

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FAQ24PVJU + RZQ24PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
EDB(°FDB)	EWB(°FWB)	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	15.57	14.3	0.96	15.57	14.3	1.05	15.57	14.3	1.21	15.57	14.3	1.30	15.57	14.3	1.41	15.57	14.3	1.62
72.0	61.0	18.94	15.3	1.18	18.94	15.3	1.34	18.94	15.3	1.57	18.94	15.3	1.68	18.94	15.3	1.82	18.94	15.3	2.12
77.0	64.0	21.47	16.5	1.35	21.47	16.5	1.59	21.47	16.5	1.86	21.47	16.5	2.00	21.47	16.5	2.18	21.47	16.5	2.54
80.0	67.0	24.00	18.0	1.57	24.00	18.0	1.86	24.00	18.0	2.19	24.00	18.0	2.35	24.00	18.0	2.56	23.02	18.0	2.78
86.0	72.0	27.72	18.8	1.93	26.74	18.4	2.15	25.76	18.0	2.37	25.33	17.8	2.47	24.79	17.6	2.59	23.81	17.2	2.82
90.0	75.0	28.19	17.5	1.94	27.21	17.0	2.16	26.24	16.6	2.38	25.80	16.4	2.48	25.26	16.2	2.61	24.29	15.7	2.84

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
EDB(°FDB)	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	24.15	4.50	26.64	4.69	30.33	4.88	30.33	4.26	30.33	3.94
64	24.11	4.59	26.60	4.77	28.89	4.59	28.89	4.02	28.89	3.72
68	24.06	4.71	26.55	4.87	26.96	4.22	26.96	3.70	26.96	3.43
70	24.03	4.77	26.00	4.77	26.00	4.04	26.00	3.54	26.00	3.29
72	24.01	4.82	25.04	4.55	25.04	3.86	25.04	3.39	25.04	3.15
75	23.59	4.79	23.59	4.23	23.59	3.60	23.59	3.16	23.59	2.94

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

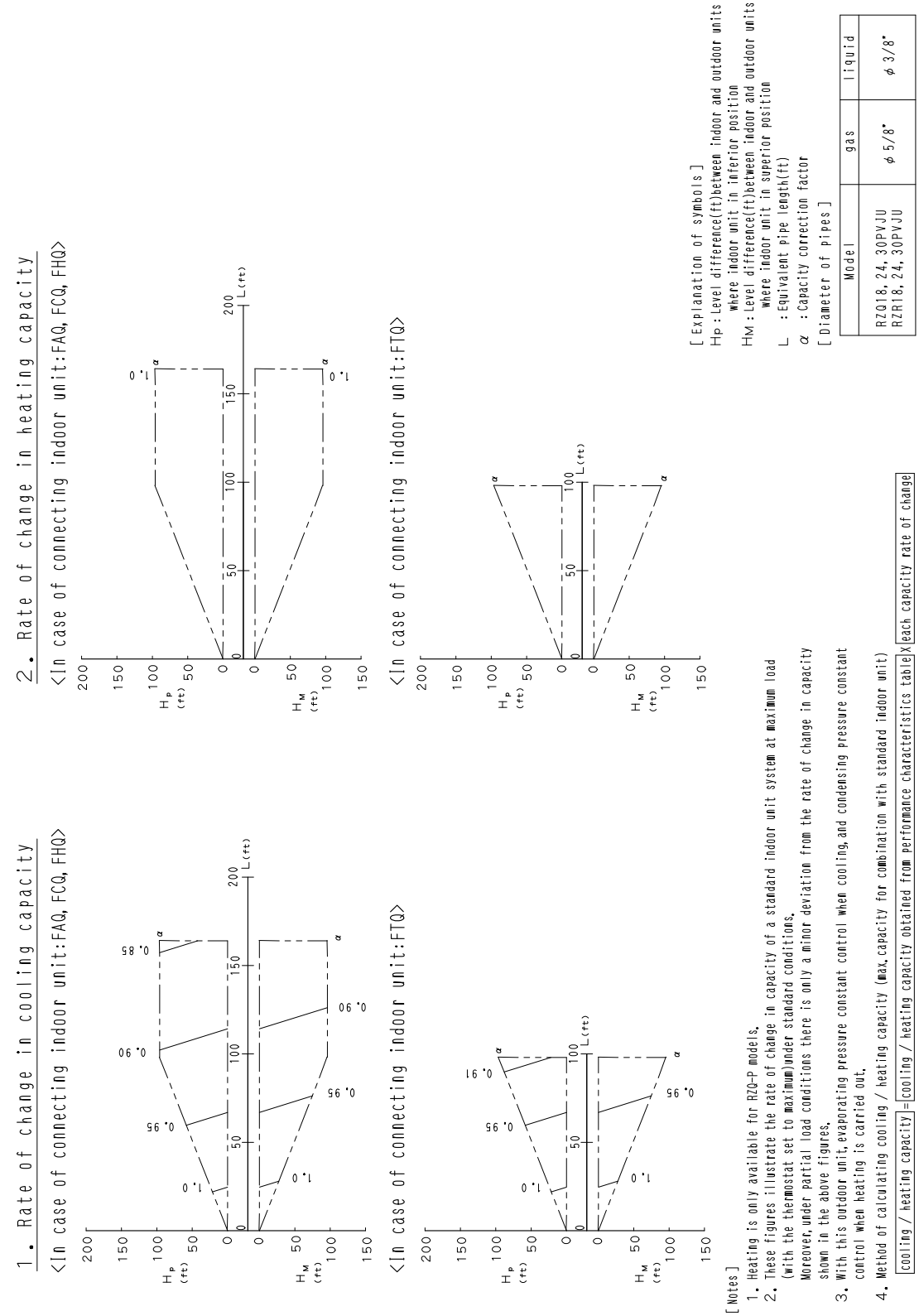
Notes:
1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

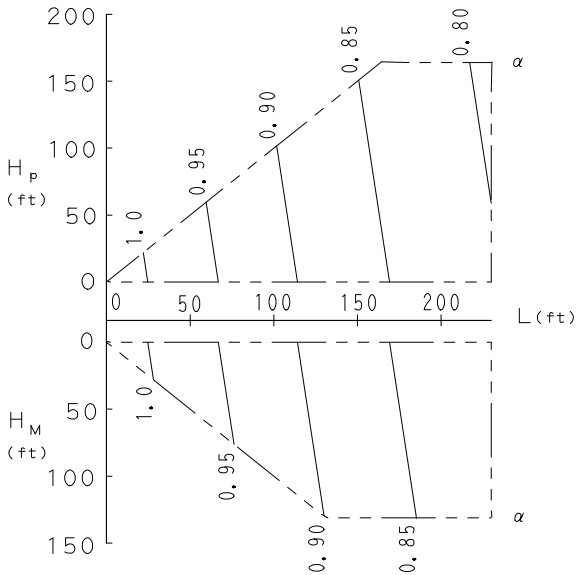
2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

9.3 Capacity correction ratio

RZR18PVJU / RZR24PVJU / RZR30PVJU
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU9



1. Rate of change in cooling capacity



[Explanation of symbols]

Hp : Level difference(ft)between indoor and outdoor units where indoor unit in inferior position

HM : Level difference(ft)between indoor and outdoor units where indoor unit in superior position

L : Equivalent pipe length(ft)

α : Capacity correction factor

[Diameter of pipes]

Model	gas	liquid
RZR36, 42PVJU	φ 5/8"	φ 3/8"

[Notes]

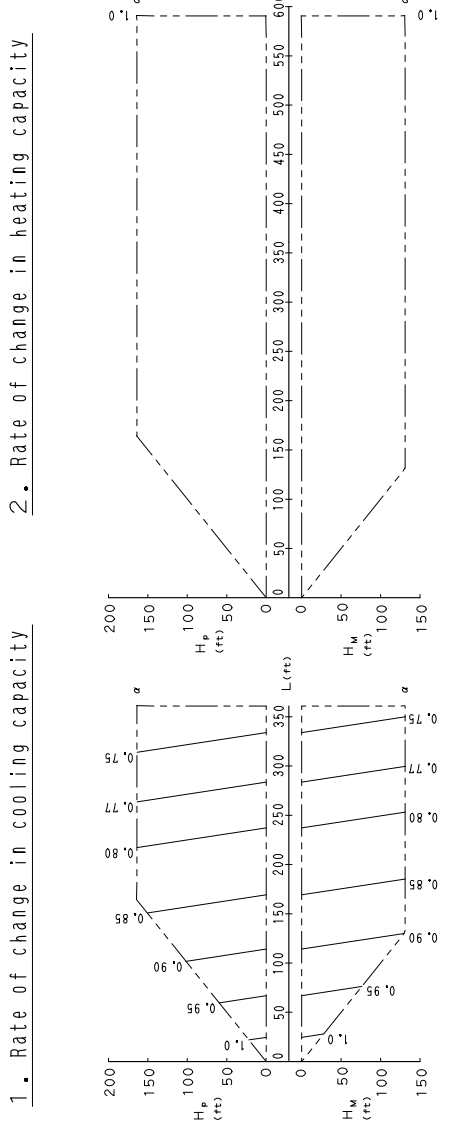
1. The figure illustrates the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard condition.
   Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figure.
2. With this outdoor unit, evaporating pressure constant control when cooling is carried out.
3. Method of calculating cooling capacity (max. capacity for combination with standard indoor unit)

   cooling capacity = cooling capacity obtained from performance characteristics table X each capacity rate of change

3D071685

RZQ36PVJU9 / RZQ42PVJU9

C: 3D047383B



[Explanation of symbols]

HP : Level difference(ft)between indoor and outdoor units where indoor unit in inferior position

HM : Level difference(ft)between indoor and outdoor units where indoor unit in superior position

L : Equivalent pipe length(ft)

α : Capacity correction factor

[Diameter of pipes]

Model	gas	liquid
RZQ36, 42PVJU9	φ 5/8"	φ 3/8"

[Notes]

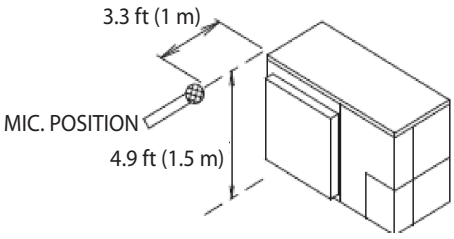
1. These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum)under standard conditions,
   Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.
2. With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3. Method of calculating cooling / heating capacity (Max. capacity for combination with standard indoor unit)

   cooling / heating capacity = cooling / heating capacity obtained from performance characteristics table × each capacity rate of change

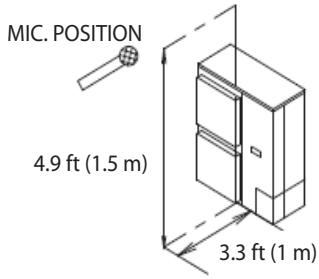
10. Sound Levels (Reference)

10.1 Overall

Location of microphone
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU
RZR18PVJU / RZR24PVJU / RZR30PVJU



Location of microphone
RZQ36PVJU9 / RZQ42PVJU9
RZR36PVJU / RZR42PVJU



dBA

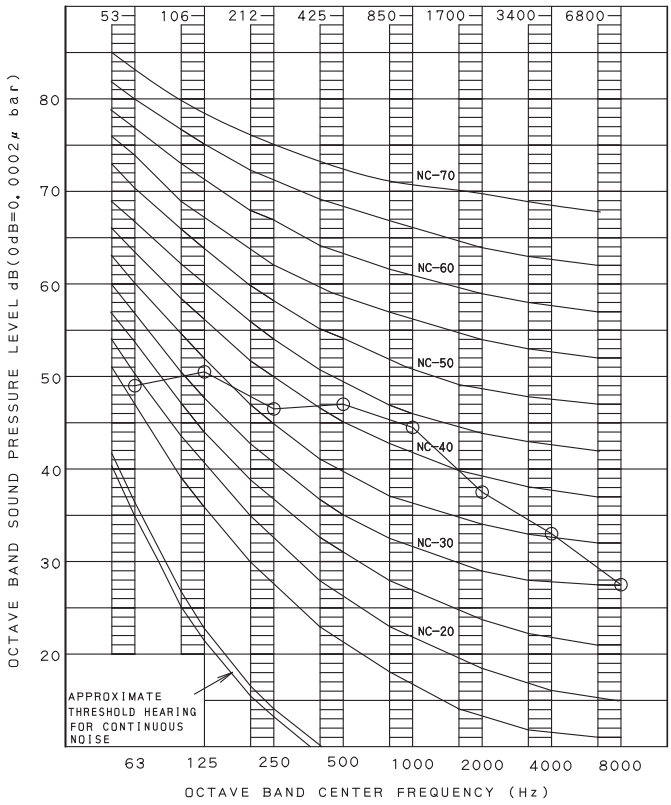
Model (Heat Pump)	208/230V, 60 Hz	Model (Cooling Only)	208/230V, 60 Hz
RZQ18PVJU9	49	RZR18PVJU	49
RZQ24PVJU9	49	RZR24PVJU	49
RZQ30PVJU	49	RZR30PVJU	49
RZQ36PVJU9	58	RZR36PVJU	58
RZQ42PVJU9	58	RZR42PVJU	58

Notes:

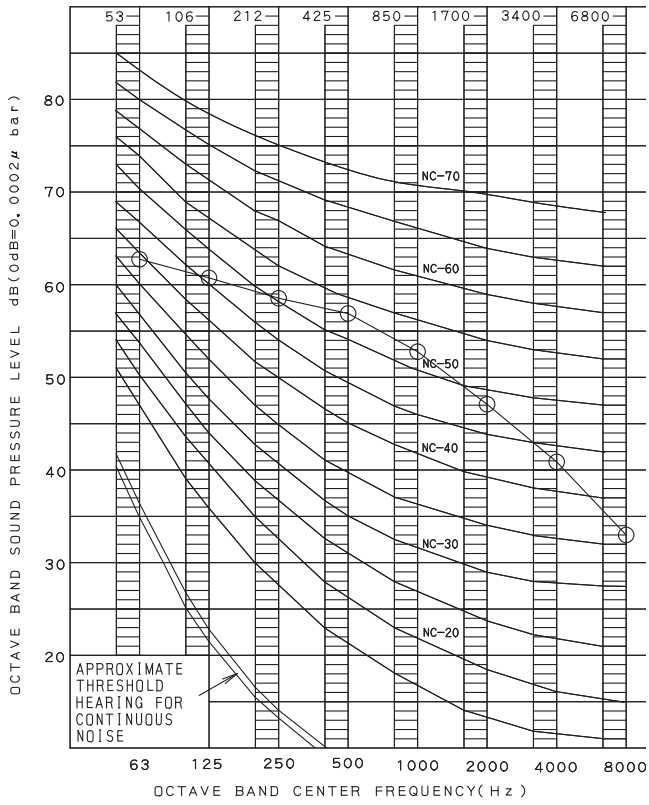
1. The operating conditions are assumed to be standard (JIS conditions). Power source 208-230V, 60hz.
2. The operating values were obtained in an anechoic chamber (conversion values).
3. Sound levels will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipment is installed.

10.2 Octave Band Level ○——○ 208V-230V, 60H

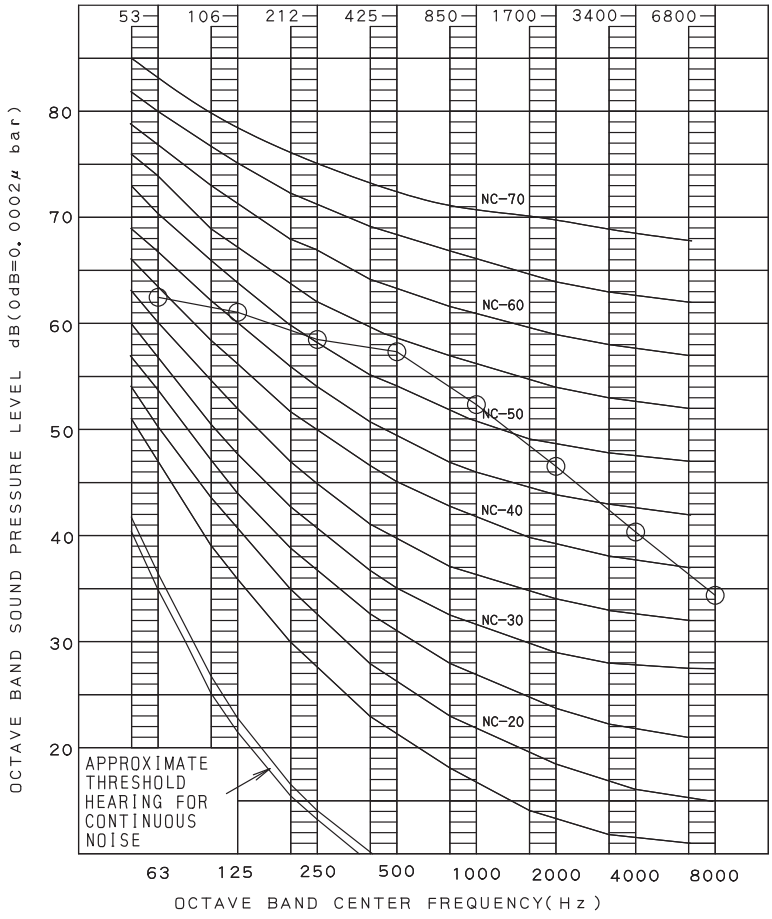
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU
RZR18PVJU / RZR24PVJU / RZR30PVJU



RZQ36PVJU9 / RZR36PVJU

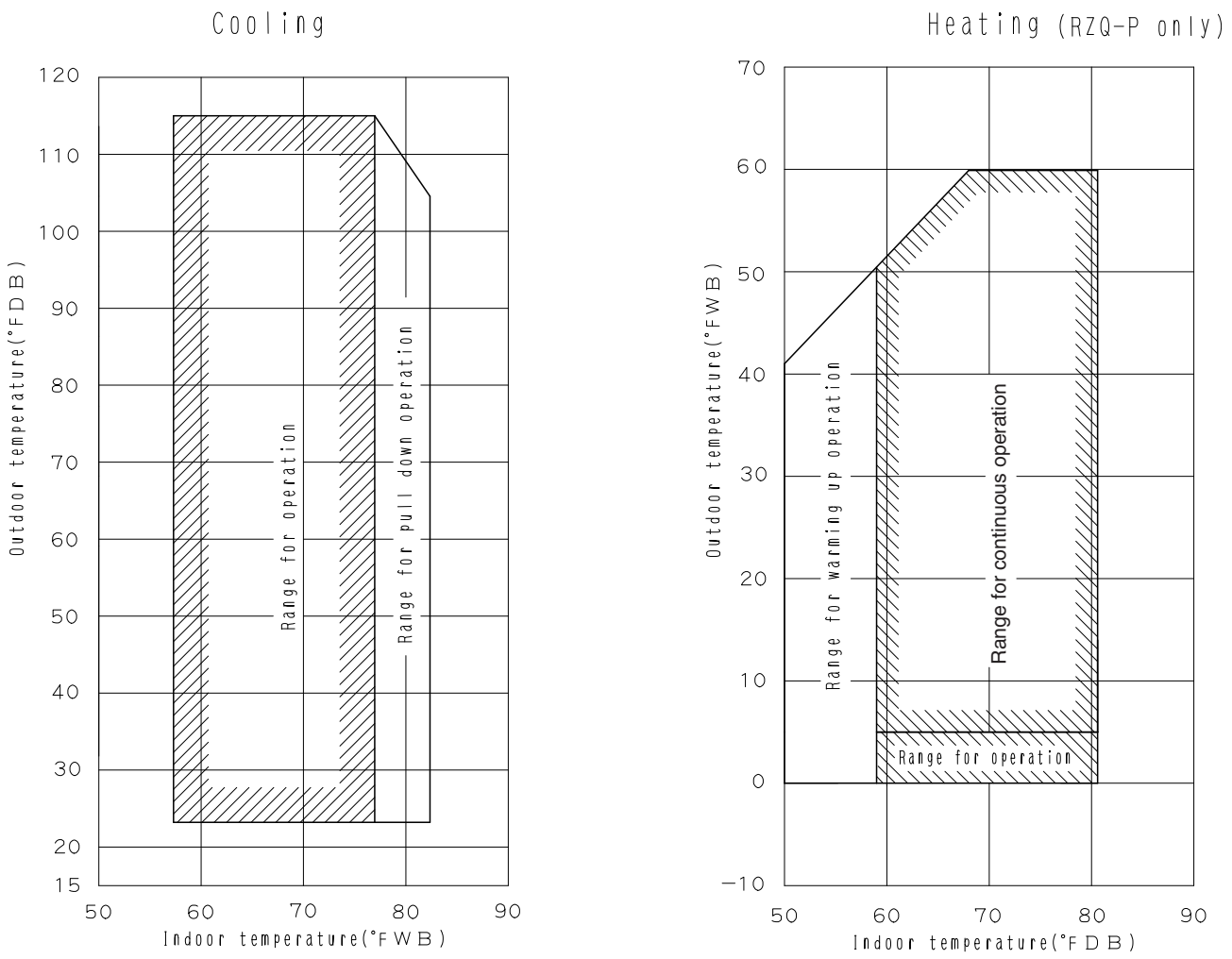


RZQ42PVJU9 / RZR42PVJU



11. Operation limits

RZR18PVJU / RZR24PVJU / RZR30PVJU
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU

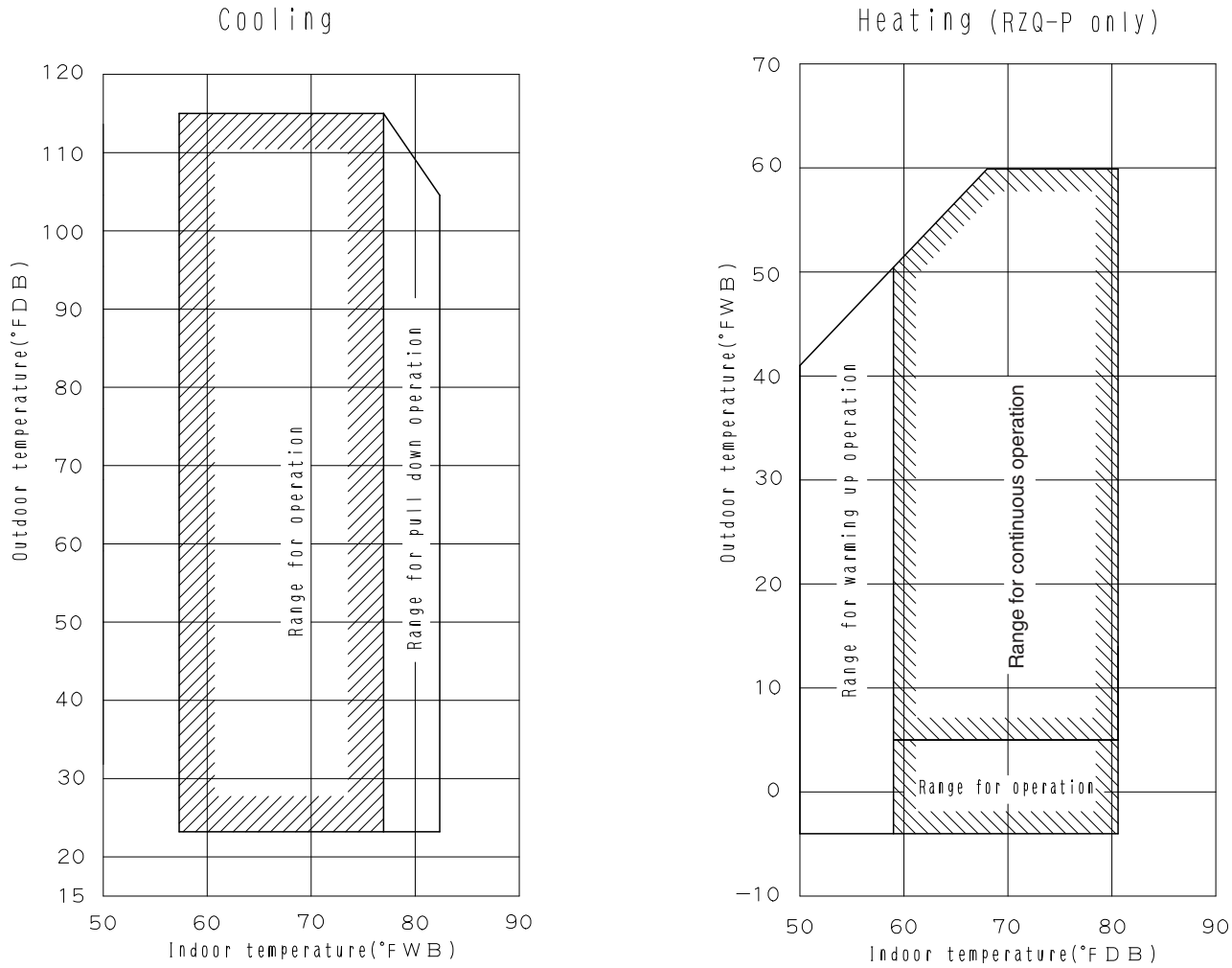


Note:These figures assume the following operating conditions.
Indoor and outdoor units:
- Equivalent pipe length:25ft
- Level difference:0ft

C: 3D064229A

NOTE: Operation can be extended to 0°F in cooling with use of the optional wind baffle.

RZR36PVJU / RZR42PVJU
RZQ36PVJU9 / RZQ42PVJU9



Note:These figures assume the following operating conditions.
Indoor and outdoor units:
- Equivalent pipe length:25ft
- Level difference:0ft

C: 3D065369A

NOTE: Operation can be extended to 0°F in cooling with use of the optional wind baffle.

12. Accessories

12.1 Indoor unit

12.1.1 FCQ

Optional accessories (For unit)

No.	Item			Model				
				FCQ18PVJU	FCQ24PVJU	FCQ30PVJU	FCQ36MVJU	FCQ42MVJU
1	Filter related	Decoration panel		BYC125K-W19				
		High efficiency filter	65%	KAF556DA160				
		High efficiency filter	90%	KAF557DA160				
		Filter chamber for above		KDDF55DA160				
		Ultra long life filter		KAF55DA160				
		Long life replacement filter	Non-woven type	KAF551KA160				
2	Fresh air intake kit			KDDJ55XA160				
3	Panel spacer			KDBP55H160WA				

C: 3D049129A

Optional accessories (For controls)

No.	Item		Model				
			FCQ18PVJU	FCQ24PVJU	FCQ30PVJU	FCQ36MVJU	FCQ42MVJU
1	Remote controller	Wired	BRC1E71				
		Wireless	BRC7C812				
2	Remote sensor		KRCS01-1B				
3	Installation box for adaptor PCB		KRP1C98				
4	Central remote controller		DCS302C71				
4-1	Electrical box		KJB311AA				
5	Unified ON/OFF controller		DCS301C71				
5-1	Electrical box		KJB212AA				
6	Schedule timer		DST301BA61				
7	External control adaptor for outdoor unit		*DTA104A62				
8	DIII-NET expander adaptor		*DTA109A51				

C: 3D049198C

Note:
1. Installation box (No.3) is necessary for each adaptor marked *.
2. Electrical box (No.4-1/5-1) is required for (No.4/5).

12.1.2 FHQ

Optional accessories (For unit)

No.	Item		Model				
			FHQ18PVJU	FHQ24PVJU	FHQ30PVJU	FHQ36MVJU	FHQ42MVJU
1	Replacement long life filter	Resin net	KAF501DA160				

Optional accessories (For controls)

No.	Item		Model				
			FHQ18PVJU	FHQ24PVJU	FHQ30PVJU	FHQ36MVJU	FHQ42MVJU
1	Remote controller	Wired	BRC1E71				
		Wireless	BRC7E83				
2	Remote sensor		KRCS01-1B				
3	Installation box for adaptor PCB		KRP1C93				
4	Central remote controller		DCS302C71				
4-1	Electrical box		KJB311AA				
5	Unified ON/OFF controller		DCS301C71				
5-1	Electrical box		KJB212AA				
6	Schedule timer		DST301BA61				
7	External control adaptor for outdoor unit		*DTA104A62				
8	DIII-NET expander adaptor		*DTA109A51				

C: 3D049198C

Note:
1. Installation box (No.3) is necessary for each adaptor marked *.
2. Electrical box (No.4-1/5-1) is required for (No.4/5).

12.1.3 FAQ

Optional accessories (For controls)

No.	Item		Model	
			FAQ18PVJU	FAQ24PVJU
1	Remote controller	Wired	BRC1E71	
		Wireless	BRC7E818	
2	Remote sensor		KRCS01-1B	
3	Installation box for adaptor PCB		—	
4	Central remote controller		DCS302C71	
4-1	Electrical box		KJB311AA	
5	Unified ON/OFF controller		DCS301C71	
5-1	Electrical box		KJB212AA	
6	Schedule timer		DST301BA61	
7	External control adaptor for outdoor unit		—	
8	DIII-NET expander adaptor		—	

C: 3D049198C

Note:
1. Installation box (No.3) is necessary for each adaptor marked *.
2. Electrical box (No.4-1/5-1) is required for (No.4/5).

12.2 Outdoor unit

Optional accessories (For unit)

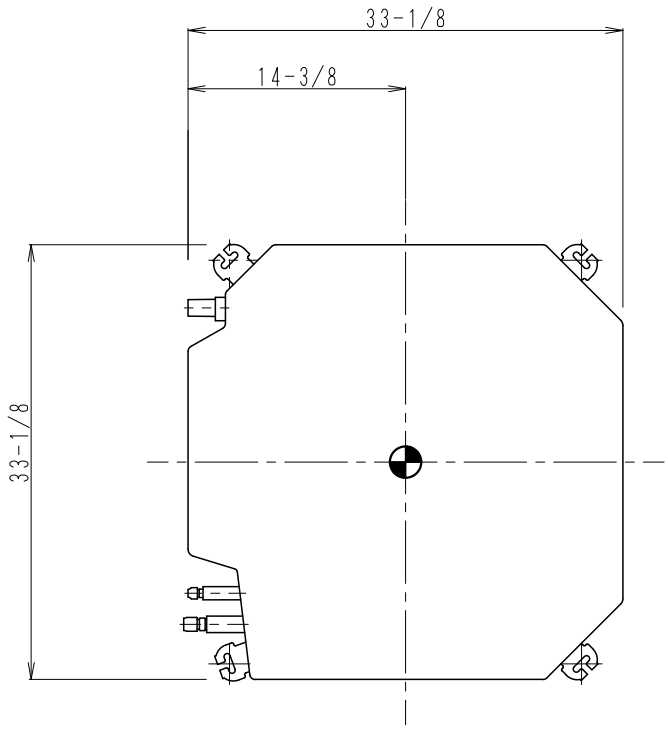
Item	Model									
	RZR18 PVJU	RZR24 PVJU	RZR30 PVJU	RZR36 PVJU	RZR42 PVJU	RZQ18 PVJU9	RZQ24 PVJU9	RZQ30 PVJU	RZQ36 PVJU9	RZQ42 PVJU9
Central drain plug	KKPJ5F180									
Fixture for preventing overturning	KPT-60B160									
Wire fixture for preventing overturning	K-KYZP15C									

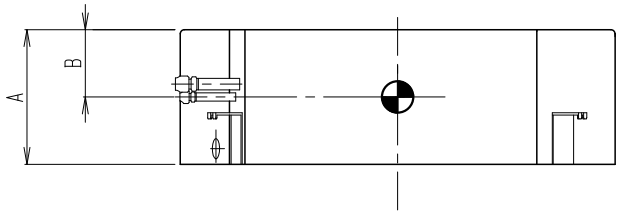
13. Center of gravity

13.1 Indoor unit

FCQ18PVJU / FCQ24PVJU / FCQ30PVJU
FCQ36MVJU / FCQ42MVJU

Unit (in.)





	A	B
FCQ36,42MVJU FCQ18、24、30PVJU	11-3/8	6-3/4

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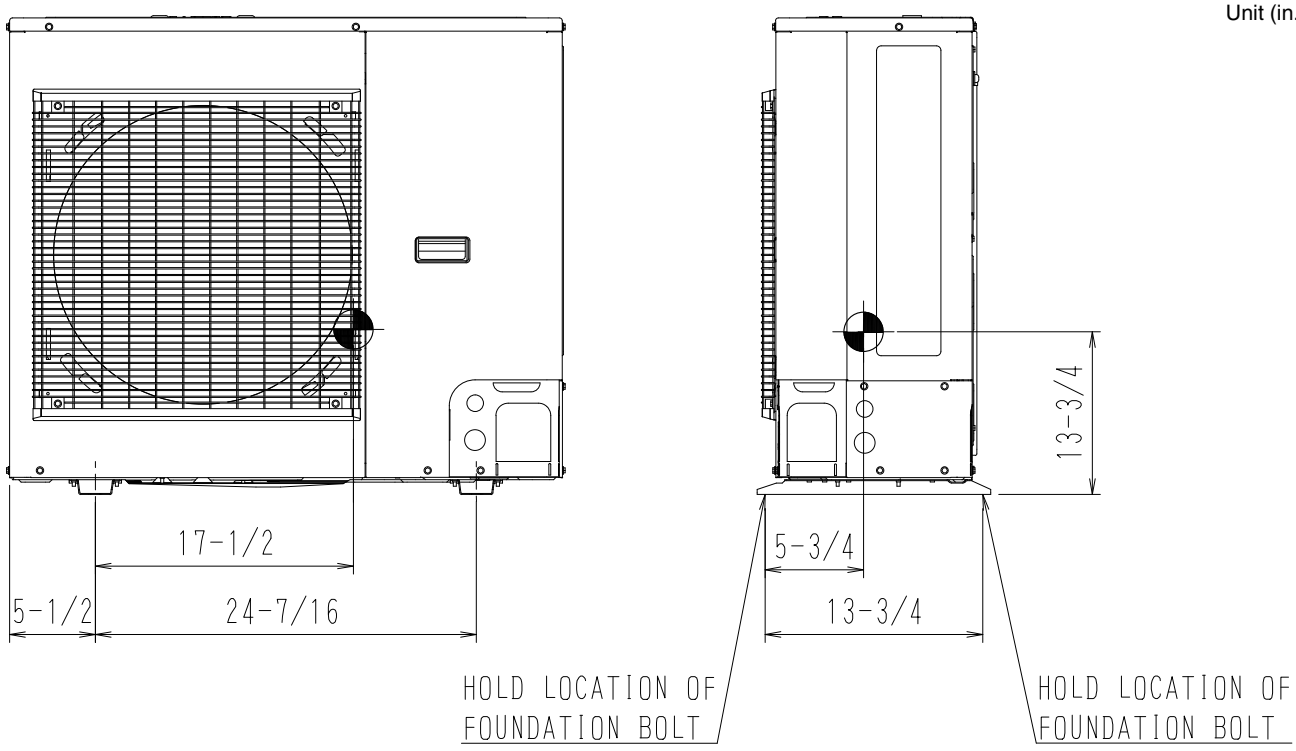
13.2 Outdoor unit

RZR18PVJU / RZR24PVJU / RZR30PVJU
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU

Unit (in.)



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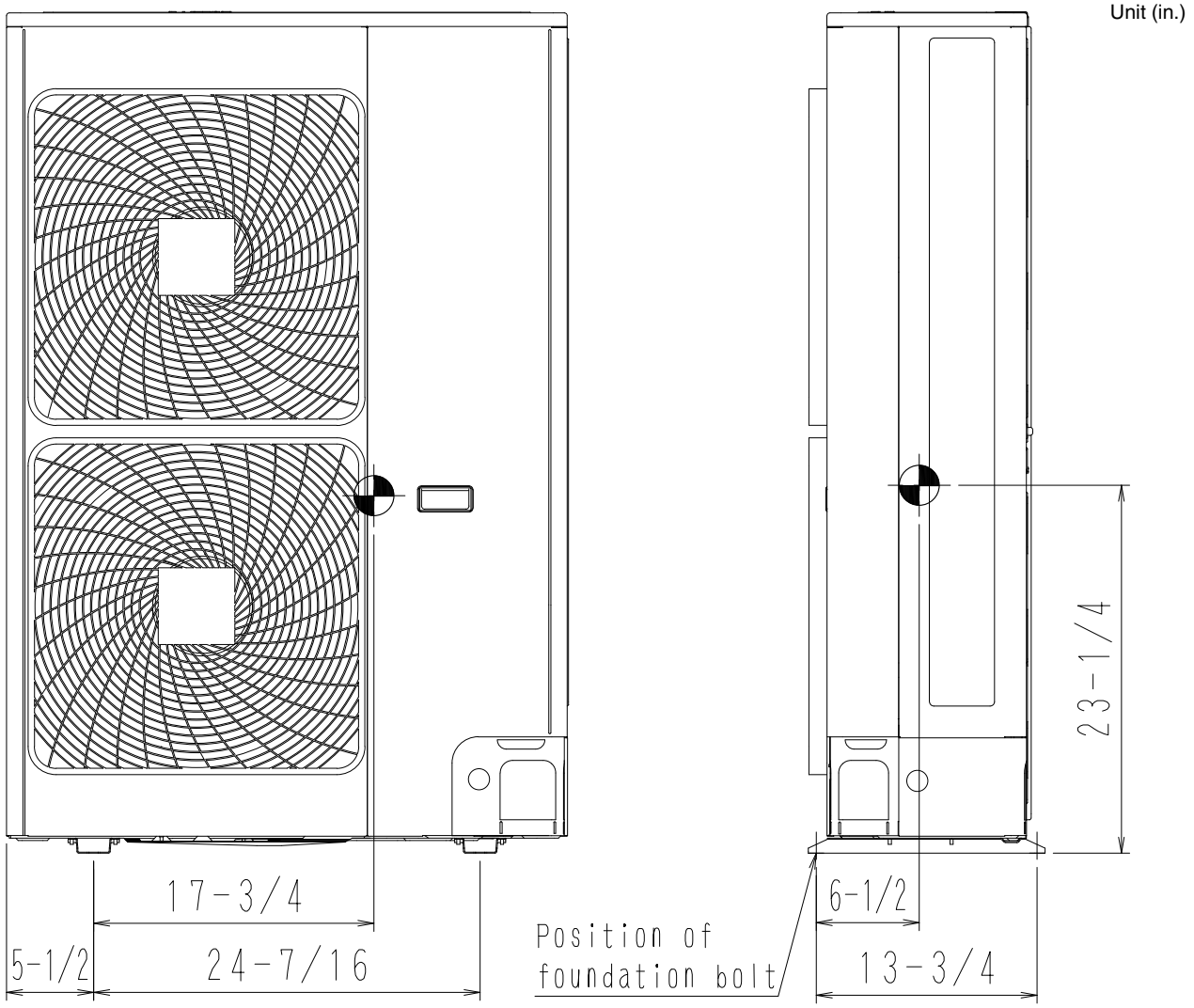
RZR36PVJU / RZR42PVJU
RZQ36PVJU9 / RZQ42PVJU9

Unit (in.)



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14. Installation of indoor unit

14.1 FCQ18PVJU / FCQ24PVJU / FCQ30PVJU

DAIKIN

SPLIT SYSTEM Air Conditioners Installation manual

CONTENTS

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9. ELECTRIC WIRING WORK 9
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1. SAFETY CONSIDERATIONS

Please read these “SAFETY CONSIDERATIONS” carefully before installing air conditioning equipment and be sure to install it correctly. After completing the installation, make sure that the unit operates properly during the start-up operation. Please instruct the customer on how to operate the unit and keep it maintained.
Also, inform customers that they should store this installation manual along with the operation manual for future reference.
This air conditioner comes under the term “appliances not accessible to the general public”.
Meaning of danger, warning, caution and note symbols.

⚠ **DANGER**..... Indicates an imminently hazardous situation which,if not avoided, will result in death or serious injury.

⚠ **WARNING**..... Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION**..... Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be sued to alert against unsafe practices.

⚠ **NOTE** ..... Indicates situation that may result in equipment or property-damage-only accidents.

⚠ DANGER

- **Do not ground units to water pipes, telephone wires or lightning rods because incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.**
- **Do not install unit in an area where flammable materials are present due to risk of explosion resulting in serious injury or death.**
- **Refrigerant gas in heavier than air and displaces oxygen. A massive leak could lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.**
- **If the refrigerant gas leaks during installation, ventilate the area immediately.**
  Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could result in severe injury or death.
- **After completing the installation work, check that the refrigerant gas does not leak.**
  Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could result in severe injury or death.
- **Safely dispose of the packing materials.**
  Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries. Tear apart and throw away plastic packaging bags so that children will not play with them. Children playing with plastic bags face the danger of death by suffocation.

⚠ WARNING

- **Ask your dealer or qualified personnel to carry out installation work. Do not try to install the unit by yourself.**
  Improper installation may result in water leakage, electric shocks or fire.
- **Perform installation work in accordance with this installation manual.**
  Improper installation may result in water leakage, electric shocks or fire.
- **Be sure to use only the specified accessories and parts for installation work.**
  Failure to use the specified parts may result in water leakage, electric shocks, fire or the unit falling.
- **Install the air conditioner on a foundation strong enough to withstand the weight of the unit.**
  A foundation of insufficient strength may result in the equipment falling and causing injuries.
- **Carry out the specified installation work after considering strong considering winds, typhoons or earthquakes.**
  Improper installation work may result in the equipment falling and causing accidents.
- **Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual.**
  An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.
- **Make sure that all wiring is secured, the specified wires are used, and no external forces act on the terminal connections or wires.**
  Improper connections or installation may result in fire.

- **When wiring the power supply and connecting the remote controller wire and transmission wire, position the wires so that the control box lid can be securely fastened.**
  Improper positioning of the control box lid may result in electric shocks, fire or the terminals overheating.
- **Before touching electrical parts, turn off the unit.**
- **Do not touch the switch with wet fingers.**
  Touching a switch with wet fingers can cause electric shock.
- **Be sure to install an earth leakage breaker.**
  Failure to install an earth leakage breaker may result in electric shocks, or fire.
- **Do not install the air conditioner in the following locations:**
  (a) where a mineral oil mist or an oil spray or vapor is produced, for example in a kitchen
  Plastic parts may deteriorate and fall off or result in water leakage.
  (b) where corrosive gas, such as sulfurous acid gas, is produced
  Corroding copper pipes or soldered parts may result in refrigerant leakage.
  (c) near machinery emitting electromagnetic waves
  Electromagnetic waves may disturb the operation of the control system and result in a malfunction of the equipment.
  (d) where flammable gases may leak, where there are carbon fiber or ignitable dust suspensions in the air, or where volatile flammables such as thinner or gasoline are handled.
  Operating the unit in such conditions may result in fire.
- **Heat exchanger fins are sharp to cut.**
  To avoid injury wear gloves to cover the fins when working around them.
- **Refrigerant pipes may be very hot or very cold during or immediately after operation.**
  Touching them could result in burns or frostbite. To avoid injury give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.

⚠ CAUTION

- **While following the instructions in this installation manual, install drain pipe in order to ensure proper drainage and insulate pipe in order to prevent condensate.**
  Improper drain pipe may result in water leakage and property damage.
- **Be very careful about product transportation.**
  Some products use PP bands for packaging. Do not use any PP bands for a means of transportation. It is dangerous.
- **Safely dispose of the packing materials.**
  Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries.
  Tear apart and throw away plastic packaging bags so that children will not play with them. If children play with a plastic bag which was not torn apart, they face the risk of suffocation.
- **Do not turn off the power immediately after stopping operation.**
  Always wait at least 5 minutes before turning off the power. Otherwise, water leakage and trouble may occur.
- **Make sure to provide for adequate measures in order to prevent that the outdoor unit be used as a shelter by small animals.**
  Small animals making contact with electrical parts can cause malfunctions, smoke or fire. Please instruct the customer to keep the area around the unit clean.

⚠ NOTE

- **Install the indoor and outdoor units, power supply wire and transmission wire at least 3.5ft. away from televisions or radios in order to prevent image interference or noise.**
  (Depending on the radio waves, a distance of 3.5ft. may not be sufficient enough to eliminate the noise.)
- **Remote controller (wireless kit) transmitting distance can result shorter than expected in rooms with electronic fluorescent lamps. (inverter or rapid start types)**
  Install the indoor unit as far away from fluorescent lamps as possible.
- **In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.**
- **Dismantling of the unit, treatment of the refrigerant, oil and eventual other parts, should be done in accordance with the relevant local and national regulations.**

2. BEFORE INSTALLATION

- **When moving the unit while removing it from the packing case, be sure to lift it by the four hanger brackets. Avoid putting any pressure on other parts especially the refrigerant piping.**
- Be sure to check the type of R410A refrigerant to be used before installing the unit. (Using an incorrect refrigerant will prevent normal operation of the unit.)
- The accessories needed for installation must be retained in your custody until the installation work is completed. Do not discard them!
- Decide upon a line of transport.
- Leave the unit inside its packaging while moving, until reaching the installation site. Where unpacking is unavoidable, use a sling of soft material or protective plates together with a rope when lifting, to avoid damage or scratches to the unit.
- When moving the unit at or after opening, hold the unit by the hanger brackets (× 4). Do not apply force to the refrigerant pipe, drain pipe or plastic parts.
- For the installation of an outdoor unit, refer to the installation manual attached to the outdoor unit.
- Do not install or operate the unit in rooms mentioned below.
  - **Laden with mineral oil, or filled with oil vapor or spray like in kitchens. (Plastic parts may deteriorate which could eventually cause the unit to fall out of place, or could lead to leaks.)**
  - **Where corrosive gas like sulfurous gas exists. (Copper tubing and brazed spots may corrode which could eventually lead to refrigerant leaks.)**
  - **Where machines can generate electromagnetic waves. (Control system may malfunction.)**
  - **Where the air contains high levels of salt such as that near the ocean and where voltage fluctuates greatly such as that in factories. Also in vehicles or vessels.**

- This unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment.
  If installed as a household appliance it could cause electromagnetic interference.

⚠ WARNING

- Entrust installation to the place of purchase or a qualified person. Improper installation could lead to leak and, in worse cases, electric shock of fire.
- Use of unspecified parts could lead to the unit falling, leaks and, in worse cases, electric shock or fire.

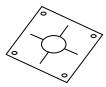
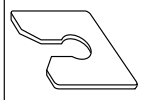
⚠ NOTE

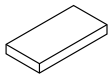
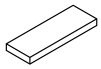
- Be sure to read this manual before installing the indoor unit.
- Be sure to mount an air filter (part to be procured in the field) in the suction air passage in order to prevent water leaking, etc.

2-1 ACCESSORIES

Check the following accessories are included with your unit.

Name	(1) Drain hose	(2) Metal clamp	(3) Washer for hanger bracket	(4) Clamp
Quantity	1 pc.	1 pc.	8 pcs.	4 pcs.
Shape				

Name	(5) Paper pattern for installation	(6) Screws (M5)	(7) Washer fixing plate	Insulation for fitting
Quantity	1 pc.	4 pcs.	4 pcs.	1 each
Shape	Also used as packing material 	For paper pattern for installation		(8) for gas pipe (9) for liquid pipe

Name	Sealing pad		
Quantity	1 each	2 pcs.	
Shape	 (10) Large  (11) Medium	(12) Small	(Other) • Installation manual • Operation manual

2-2 OPTIONAL ACCESSORIES

- The optional decoration panel and remote controller are required for this indoor unit.

Table 1

Model	Optional decoration panel	
	Color	White
FCQ18 · 24 · 30PVJU	BYC125K-W1	

Table 2

Remote controller	
Wired type	BRC1C71
Wireless type	BRC7C812

FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED.

a. Items to be checked after completion of work

Items to be checked	If not properly done, what is likely to occur.	Check
Are the indoor and outdoor unit fixed firmly?	The units may drop, vibrate or make noise.	
Is the gas leak test finished?	It may result in insufficient cooling.	
Is the unit fully insulated?	Condensate water may drip.	
Does drainage flow smoothly?	Condensate water may drip.	
Does the power supply voltage correspond to that shown on the name plate?	The unit may malfunction or the components burn out.	
Are wiring and piping correct?	The unit may malfunction or the components burn out.	
Is the unit safely grounded?	It may result in electric shock.	
Is wiring size according to specifications?	The unit may malfunction or the components burn out.	
Is something blocking the air outlet or inlet of either the indoor or outdoor units?	It may result in insufficient cooling.	
Are refrigerant piping length and additional refrigerant charge noted down?	The refrigerant charge in the system is not clear.	

b. Items to be checked at time of delivery

Also review the “1. SAFETY CONSIDERATIONS”

Items to be checked	Check
Did you explain about operations while showing the operation manual to your customer?	
Did you hand the operation manual over to your customer?	

2-3 NOTE TO INSTALLER

- Be sure to instruct customers how to properly operate the unit (especially cleaning filters, operating different functions, and adjusting the temperature) by having them carry out operations themselves while looking at the manual.

3. SELECTING INSTALLATION SITE

Please attach additional thermal insulation material to the unit body when it is believed that the relative humidity in the ceiling exceeds 80%. Use glass wool, polyethylene foam, or similar with a thickness of 3/8 in.. or more as thermal insulation material.

(1) Select an installation site where the following conditions are fulfilled and that meets with your customer’s approval.
- In the upper space (including the back of the ceiling) of the indoor unit where there is no possible dripping of water from the refrigerant pipe, drain pipe, water pipe, etc.
- Where optimum air distribution can be ensured.
- Where nothing blocks the air passage.

- Where condensate can be properly drained.
- Where the false ceiling is not noticeably on an incline.
- Where sufficient clearance for maintenance and service can be ensured.
- Where piping between indoor and outdoor units is possible within the allowable limit. (Refer to the installation manual of the outdoor unit.)

⚠ DANGER

- Do not install unit in an area where flammable materials are present due to the risk explosion resulting in serious injury or death.

⚠ WARNING

- If the supporting structural members are not strong enough to take the unit's weight, the unit could fall out of place and cause serious injury.

⚠ NOTE

- Install the indoor and outdoor units, power supply wire and connecting wires at least 3.5ft. away from televisions or radios in order to prevent image interference or noise. (Depending on the radio waves, a distance of 3.5ft. may not be sufficient enough to eliminate the noise.)

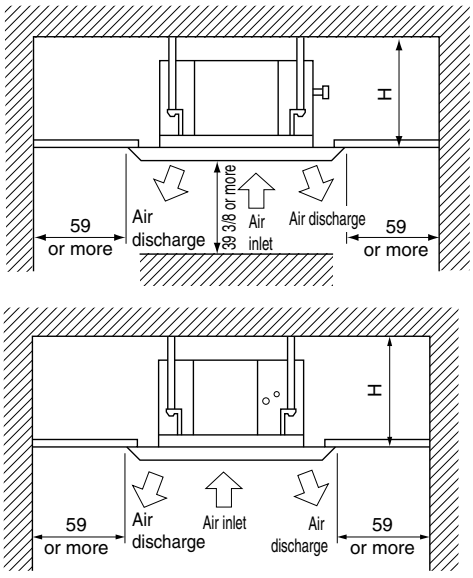
(2) Ceiling height

This indoor unit may be installed on ceilings up to 10.5 ft. in height.

(3) Use suspension bolts for installation. Check whether the ceiling is strong enough to support the weight of the unit or not. If there is a risk, reinforce the ceiling before installing the unit.

(Installation pitch is marked on the paper pattern for installation. Refer to it to check for points requiring reinforcing.)

[Space required for installation]

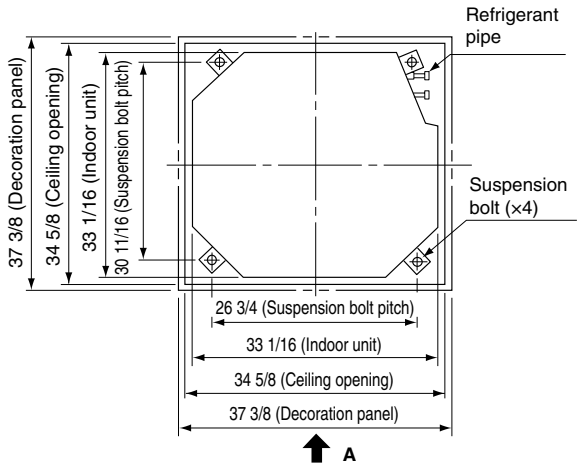


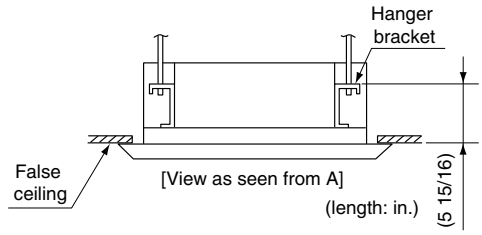
Model	H
FCQ18 · 24 · 30PVJU	11 3/4 or more

(length: in.)

4. PREPARATIONS BEFORE INSTALLATION

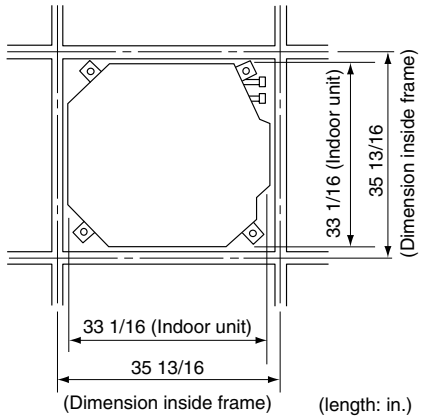
(1) Relation of ceiling opening to unit and suspension bolt position



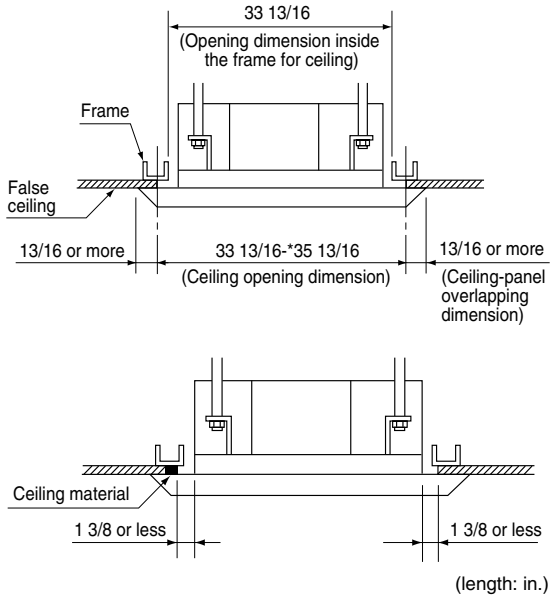


■ Installation is possible when ceiling opening dimensions is as follows.

- When installing the unit within the frame for fixing false ceiling.



(length: in.)



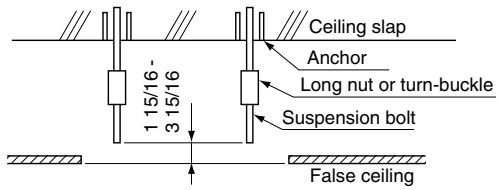
NOTE) Installation is possible with a ceiling dimension of 35 13/16 in. (marked with *). However, to achieve a ceiling-panel overlapping dimension of 13/16 in., the spacing between the ceiling and the unit should be 1 3/8 in. or less. If the spacing between ceiling and the unit is over 1 3/8 in., attach false ceiling to ■ part or recover the ceiling.

(2) Make the ceiling opening needed for installation where applicable. (For existing ceilings)

- Refer to the paper pattern for installation (5) for ceiling opening dimensions.
- Create the ceiling opening required for installation. From the side of the opening to the casing outlet, implement the refrigerant and drain pipe and remote controller wire (unnecessary for wireless type) and indoor-outdoor unit casing outlet. Refer to the “REFRIGERANT PIPING WORK (Page 7), DRAIN PIPING WORK (Page 8) and ELECTRIC WIRING WORK (Page 9)”.
- After making an opening in the ceiling, it may be necessary to reinforce ceiling beams to keep the ceiling level and to prevent it from vibrating. Consult the builder for details.

(3) Install the suspension bolts.
(Use either a W3/8 or M10 size bolt)
Use a hole-in anchor for existing ceilings, and a sunken insert, sunken anchor or other field supplied parts for new ceilings to reinforce the ceiling to bear the weight of the unit. Adjust clearance from the ceiling before proceeding further.

〈 Installation example 〉



NOTE) All the above parts are field supplied.

(length: in.)

5. INSTALLATION PROCEDURES FOR FRESH AIR INTAKE DUCT CONNECTION

(1) Cut off the knockout hole on the side plate.
Then, cut the inner insulation of the hole portion.
(Refer to Fig. 1)

(2) Adhere the insulation for opening of unit to the opening.
(Refer to Fig. 2)

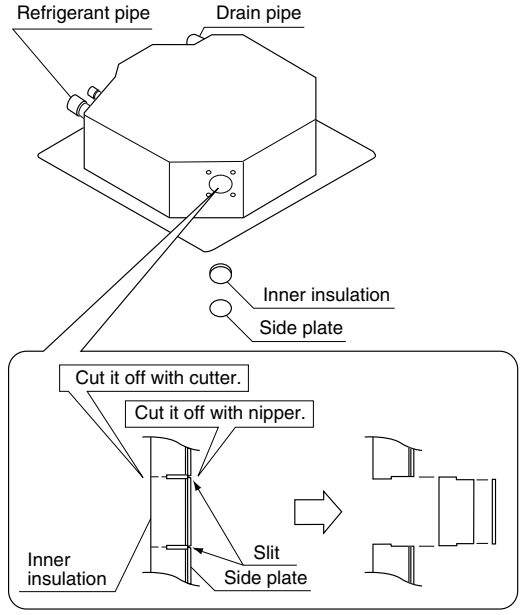


Fig. 1

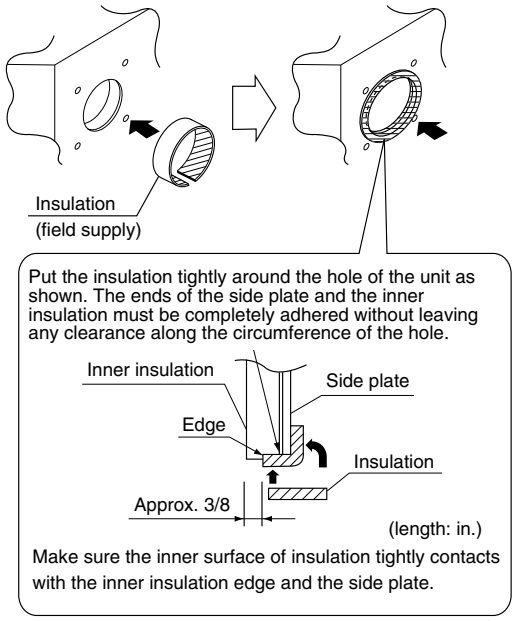

Insulation
(field supply)
Put the insulation tightly around the hole of the unit as shown. The ends of the side plate and the inner insulation must be completely adhered without leaving any clearance along the circumference of the hole.
Inner insulation
Side plate
Edge
Insulation
Approx. 3/8
(length: in.)
Make sure the inner surface of insulation tightly contacts with the inner insulation edge and the side plate.

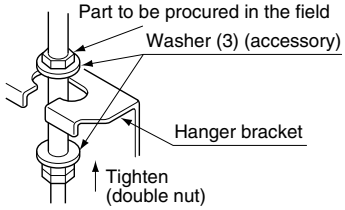
Fig. 2

6. INDOOR UNIT INSTALLATION

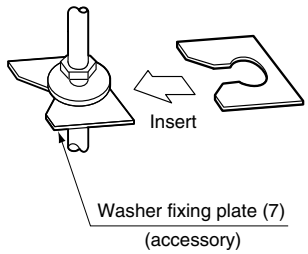
Installing optional accessories (except for the decoration panel) before installing the indoor unit is easier. However, for existing ceilings, install fresh air inlet component kit and branch duct before installing the unit.

(1) Install the indoor unit temporarily.

- Attach the hanger bracket to the suspension bolt. Be sure to fix it securely by using a nut and washer from the upper and lower sides of the hanger bracket.
  The washer fixing plate (7) will prevent the washer from falling.



[Securing the hanger bracket]

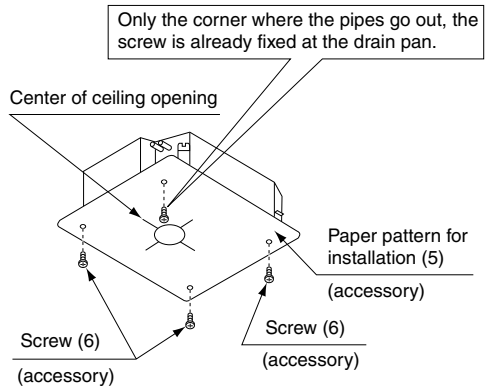


[Securing the washer]

6-1 For new ceilings

(2)

- Refer to the paper pattern for installation (5) for ceiling opening dimension.
  Consult the builder or carpenter for details.
- The center of the ceiling opening is indicated on the paper pattern for installation.
  The center of the unit is indicated on the label attached to the unit and on the paper pattern for installation.
- After removing the packaging material from the 4 corners of the paper pattern for installation (5), fix the paper pattern to the unit with screws (6) (×4).
- Ceiling height is shown on the side of the paper pattern for installation (5). Adjust the height of the unit according to this indication.


Only the corner where the pipes go out, the screw is already fixed at the drain pan.
Center of ceiling opening
Paper pattern for installation (5)
(accessory)
Screw (6)
(accessory)
Screw (6)
(accessory)

〈**Ceiling work**〉

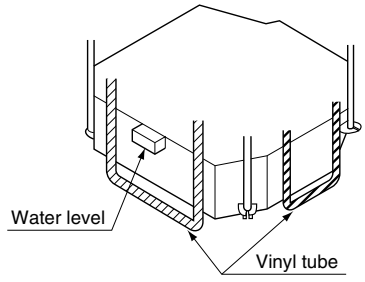
(3) Adjust the unit to the right position for installation.
(Refer to "**PREPARATIONS BEFORE INSTALLATION-(1)**".) (Page 4)

(4) Check the unit is horizontally level.

- **The indoor unit is equipped with a built-in drain pump and float switch. At each of the unit's 4 corners, verify that it is level by using a water-level or a water-filled vinyl tube.**
  (If the unit is inclined against condensate flow, the float switch may malfunction and cause water to drip.)

(5) Remove the washer fixing plate (7) used for preventing the washer from falling and tighten the upper nut.

(6) Remove the paper pattern for installation (5).



6-2 For existing ceilings

(2) Adjust the height and position of the unit.
(Refer to "**PREPARATIONS BEFORE INSTALLATION-(1)**".)

(3) Perform steps **(4)**, **(5)** in "**6-1 For new ceilings**".

7. REFRIGERANT PIPING WORK

7-1 GENERAL INSTRUCTIONS

- For refrigerant pipe of outdoor units, see the installation manual attached to the outdoor unit.
- Before refrigerant piping work, check which type of refrigerant is used. Proper operation is not possible if the types of refrigerant are not the same.
- The outdoor unit is charged with refrigerant.

⚠ DANGER

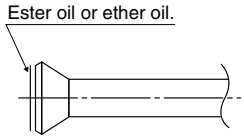
- Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan heater, stove or cooking device. Exposure to this gas could cause severe injury or death.

⚠ NOTE

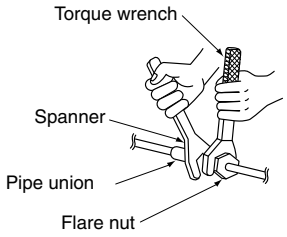
- Use a pipe cutter and flare suitable for the type of refrigerant.
- To prevent dust, moisture or other foreign matter from infiltrating the tube, either pinch the end or cover it with tape.
- Do not allow anything other than the designated refrigerant to get mixed into the refrigerant circuit, such as air, etc. If any refrigerant gas leaks while working on the unit, ventilate the room thoroughly right away.

7-2 Connecting the refrigerant pipe

- When connecting the flare nut, coat the flare with ester oil or ether oil and initially tighten by hand 3 or 4 turns before tightening firmly.

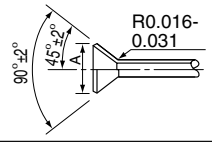


- To prevent flare nut cracking and gas leaking, be sure to use both a spanner and torque wrench together, as shown in the drawing below, when connecting or disconnecting pipes to/from the unit.



- Refer to the Table 3 for the dimensions of flare shape.
- Refer to the Table 3 to determine the proper tightening torque.

Table 3

Pipe size (in.)	Tightening torque (ft.lbf)	Flare dimensions A (in.)	Flare shape (in.)
ϕ 3/8	24.1-29.4	0.504-0.520	
ϕ 5/8	45.6-55.6	0.760-0.776	

⚠ NOTE

- Apply ester oil or ether oil around the flare portions before connecting.
- The flare nuts used must be those included with the main body.
- Over-tightening may damage the flare and cause a refrigerant leakage.

Not recommended but in case of emergency

You must use a torque wrench but if you are obliged to install the unit without a torque wrench, you may follow the installation method mentioned below.

After the work is finished, make sure to check that there is no gas leak.

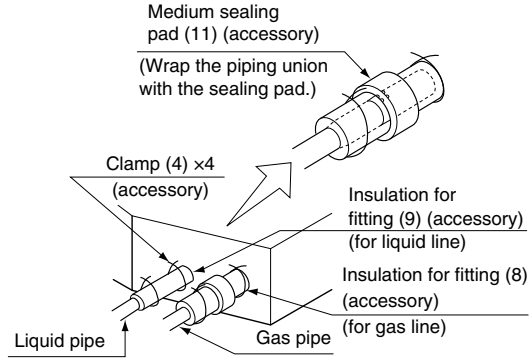
When you keep on tightening the flare nut with a spanner, there is a point where the tightening torque suddenly increases. From that position, further tighten the flare nut the angle shown below:

Table 4

Pipe size (in.)	Further tightening angle	Recommended arm length of tool (in.)
ϕ 3/8	60 to 90 degrees	Approx. 7 7/8
ϕ 5/8	30 to 60 degrees	Approx. 11 13/16

7-3 Piping insulation

- Execute heat insulation work completely on both sides of the gas pipe and the liquid pipe. Otherwise, a water leakage can result sometimes.
  *Be sure to use insulation that is designed for use with HVAC Systems.
- Also, in cases where the temperature and humidity of the refrigerant pipe sections might exceed 86°F or RH80%, reinforce the refrigerant insulation. (13/16 in. or thicker) Condensate may form on the surface of the insulating material.
- Check the pipe connector for gas leaking, then insulate it as shown in the drawing below.
- Make absolutely sure to execute heat insulation works on the pipe-connecting section after checking gas leakage by thoroughly studying the following figure and using the attached heat insulating materials for fitting. (Fasten both ends with the clamps (accessory).)
- Wrap the sealing pad (accessory) only around the insulation for the joints on the gas pipe side.

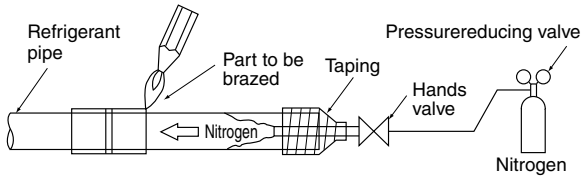

Medium sealing pad (11) (accessory)
(Wrap the piping union with the sealing pad.)
Clamp (4) ×4 (accessory)
Insulation for fitting (9) (accessory) (for liquid line)
Insulation for fitting (8) (accessory) (for gas line)
Liquid pipe
Gas pipe

⚠ CAUTION

- Be sure to insulate any field piping all the way to the piping connection inside the unit. Any exposed pipe may cause condensate or burns if touched.

7-4 Brazing refrigerant piping

- Before brazing local refrigerant pipe, nitrogen gas shall be blown through the pipe to expel air from the pipe.
  If your brazing is done without nitrogen gas blowing, a large amount of oxide film develops inside the pipe, and could cause system malfunction.
- When brazing the refrigerant pipe, only begin brazing after having carried out nitrogen substitution or while inserting nitrogen into the refrigerant pipe. Once this is done, connect the indoor unit with a flared or a flanged connection.
- Nitrogen should be set to 2.9psi. with a pressure-reducing valve if brazing while inserting nitrogen into the pipe.



⚠ DANGER

- Use of oxygen may cause an explosion resulting in serious injury or death. Only use nitrogen gas.

⚠ NOTE

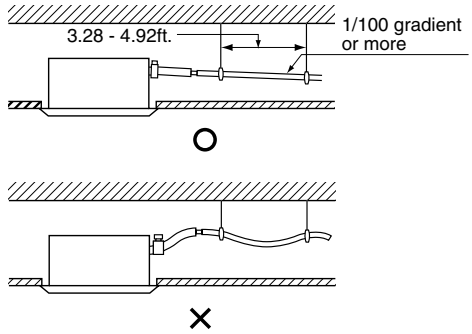
- Do not use flux when brazing refrigerant pipe. Therefore, use the phosphor copper brazing filler metal (BCuP) which does not require flux.
  (Flux has an extremely negative effect on refrigerant piping systems. For instance, if chlorine based flux is used, it will cause pipe corrosion. If the flux contains fluorine, it will damage the refrigerant oil.)

8. DRAIN PIPING WORK

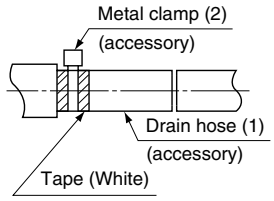
〈〈**Rig the drain pipe as shown below and take measures against condensate. Improperly rigged pipe could lead to leak and eventually wet furniture and belongings.**〉〉

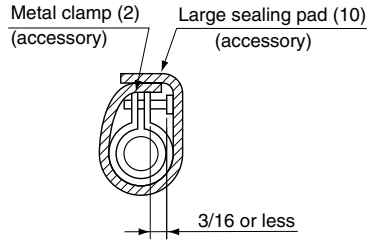
(1) Rig drain pipe

- The diameter of the drain pipe should be greater than or equal to the diameter of the connecting pipe (vinyl tube; pipe size: 1 in.; outer dimension: 1 1/4 in.). (This does not apply to rise.)
- Keep the drain pipe short and sloping downwards at a gradient of at least 1/100 to prevent air pockets from forming.
- If the drain pipe cannot be sufficiently set on a slope, execute the drain raising pipe.
- To keep the drain pipe from sagging, space hanging wires every 3.28 ~ 4.92ft.



- Use the attached drain hose (1) and metal clamp (2). Insert the drain hose into the drain socket, up to the white tape. Tighten the clamp until the screw head is less than 3/16 in. from the hose.
- **Be sure to insulate the 2 below indicated spots. If uninsulated, there is always the possibility of condensate forming and leaking.**
  - The drain pipe inside the building
  - Drain socket
- Wrap the attached sealing pad (10) (Large) over the clamp and drain hose to insulate, as shown in the drawing below.

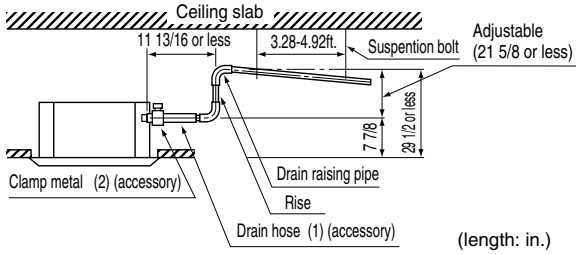




(length: in.)

〈**NOTE FOR DRAIN RAISING PIPE**〉

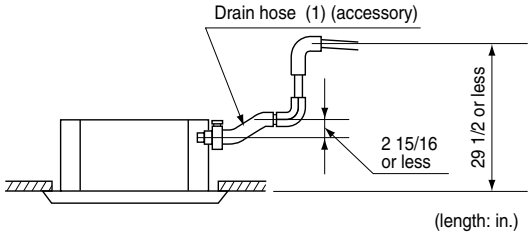
- Install the drain raising pipe at a height of less than 21 5/8 in.
- Install the drain raising pipe at a right angle to the indoor unit and no more than 11 13/16 in. from the unit.



(length: in.)

NOTE

- The incline of attached drain hose (1) should be 2 15/16 in. or less so that the drain socket does not have to stand additional force.



Select converging drain pipe whose gauge is suitable for the operating capacity of the unit.

- Drain pipe connections
  Do not connect the drain pipe directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipe and corrode the heat exchanger.
- Keep in mind that it will become the cause of getting drain pipe blocked if water collects on drain pipe.

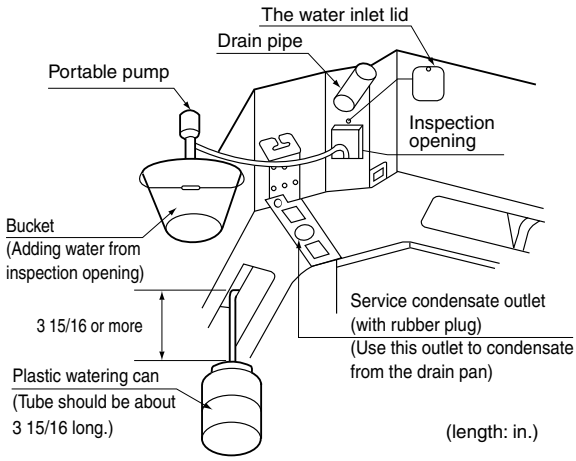
(2) After piping work is finished, check if drainage flows smoothly.
  - Open the water inlet lid, add approximately 37 in³ of water slowly and check drainage flow.

WHEN ELECTRIC WIRING WORK IS FINISHED

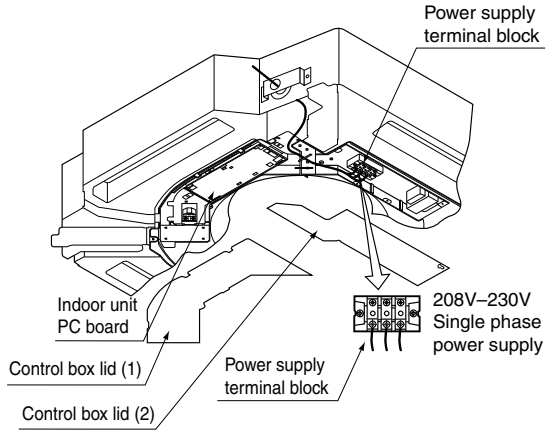
- Check drainage flow during COOL running, explained under "TEST OPERATION".

WHEN ELECTRIC WIRING WORK IS NOT FINISHED

- Remove the control box lids, connect a power supply wire and remote controller wire to the terminals.
  (Refer to the "HOW TO CONNECT WIRES" (Page 10))
  Next, press the INSPECTION/TEST OPERATION button "TEST" on the remote controller. The unit will engage the test operation mode. Press the OPERATION MODE SELECTOR button "" until selecting FAN SPEED CONTROL button "". Then, press the ON/OFF button "". The indoor unit fan and drain pump will start up. Check that the water has drained from the unit. Press "TEST" to go back to the first mode.



〈 Adding water through air discharge outlet 〉
[Method of adding water]


Power supply terminal block
Indoor unit PC board
208V–230V Single phase power supply
Control box lid (1)
Power supply terminal block
Control box lid (2)

9. ELECTRIC WIRING WORK

9-1 GENERAL INSTRUCTIONS

- All field supplied parts and materials, electric works must conform to local codes.
- Use copper wire only.
- Follow the "WIRING DIAGRAM" attached to the unit body to wire the outdoor unit, indoor unit and the remote controller. For details on hooking up the remote controller, refer to the "INSTALLATION MANUAL OF REMOTE CONTROLLER".
- All wires must be performed by an authorized electrician.
- A circuit breaker capable of shutting down the power supply to the entire system must be installed.
- Be sure to ground the air conditioner.

DANGER

- Do not ground units to water pipes, telephone wires or lightning rods because incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.

9-2 ELECTRICAL CHARACTERISTICS

Units				Power supply		Fan motor	
Model	Hz	Volts	Voltage range	MCA	MFA	W	FLA
FCQ18PVJU	60	208-230V	Max. 253 Min. 187	1.3	15	90	1.0
FCQ24PVJU				1.3	15	90	1.0
FCQ30PVJU				1.3	15	90	1.0

MCA: Min. Circuit Amps (A) MFA: Max. Fuse Amps (A)
KW: Fan Motor Rated Output (kW) FLA: Full Load Amps (A)

9-3 SPECIFICATIONS FOR FIELD SUPPLIED FUSES AND WIRES

Model	Power supply wiring		Transmission wiring	
	Field fuses	Size	Wire	Size
FCQ18PVJU FCQ24PVJU FCQ30PVJU	15A	Wire size must comply with local codes.	Sheathed wire (2 wires)	AWG 18-16

Allowable length of transmission wire and remote controller wire are as follows.

(1) Outdoor unit – Indoor unit:
Max. 3280 ft.

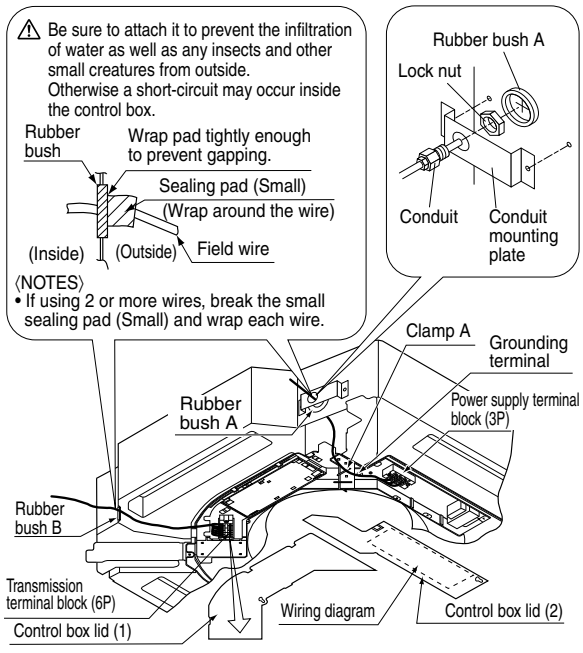
(2) Indoor unit – Remote controller:
Max. 1640 ft.

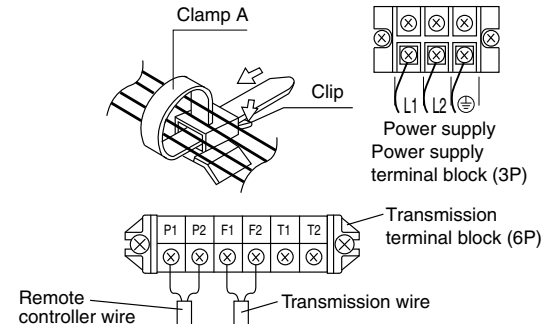
10. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER

10-1 HOW TO CONNECT WIRES

〈**Methods of wiring power supply, units and connecting remote controller wires**〉

- Power supply wire
  Remove the control box lid (2) and connect wires to the power supply terminal block (3P) inside. In doing this, pull the wires inside through rubber bush A and clamp the wires along with other wires using clamp A, untightening the clip of clamp A by pressing. After the connection, tighten clamp A as before.
- Transmission wire and remote controller wire
  Remove the control box lid (1) and pull the wires inside through rubber bush B and connect to the transmission terminal block (6P).
- After connection, attach sealing pad
  (Be sure to attach it to prevent water from infiltrating the unit from the outside.)


⚠ Be sure to attach it to prevent the infiltration of water as well as any insects and other small creatures from outside.
Otherwise a short-circuit may occur inside the control box.
Rubber bush
Wrap pad tightly enough to prevent gapping.
Sealing pad (Small)
(Wrap around the wire)
(Inside)
(Outside)
Field wire
〈NOTES〉
• If using 2 or more wires, break the small sealing pad (Small) and wrap each wire.
Rubber bush A
Lock nut
Conduit
Conduit mounting plate
Clamp A
Grounding terminal
Power supply terminal block (3P)
Rubber bush A
Rubber bush B
Transmission terminal block (6P)
Control box lid (1)
Wiring diagram
Control box lid (2)



⚠ CAUTION

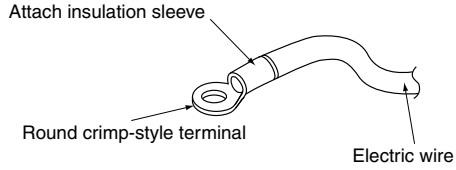
- Even if the control box lid (1)(2) is removed, pull the remote controller wire, transmission wire and the power supply wire inside the unit so that the wires do not come into contact with the opening section of the metal casing.
- Pass conduits through the wall and secure along with the refrigerant pipe in order to prevent external pressure being applied to transmission wire and power supply wire.
- Arrange the wires and fix a lid firmly so that the lid does not float during wiring work.
- Do not clamp remote controller wire and transmission wire together with power supply wire. Doing so may cause malfunction.
- Remote controller wire, transmission wire and power supply wire should be located at least 5 in. from other electric wires. Not following this guideline may result in malfunction due to electrical noise.

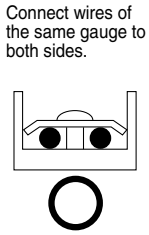
⚠ WARNING

- Never connect power supply wiring to the terminal block for remote controller wiring as this could damage the entire system.
- Use only specified wire and connect wires to the terminal tightly. Be careful wires do not place external stress on terminals. Keep wires in neat order so as to not obstruct other equipment. Make sure that the electric box lid fits tightly. Incomplete connections could result in overheating and, in worse case, result in electric shock or fire.

⚠ NOTE

1. Use round crimp-style terminals for connecting wires to the power supply terminal block.
   If unavailable, observe the following points when wiring.
   - Do not connect wires of different gauge to the same power supply terminal.
     (Looseness in the connection may cause overheating.)





2. Tightening torque for the terminal screws.
   - Use the correct screwdriver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
   - If the terminal screws are tightened too hard, screws might be damaged.
   - Refer to the table below for the tightening torque of the terminal screws.

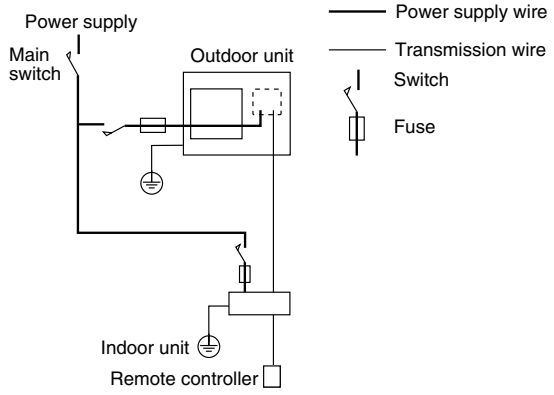
Terminal	Size	Tightening torque (ft.lbf)
Transmission terminal block (6P)	M3.5	0.58 - 0.72
Power supply terminal block (3P)	M4	0.87 - 1.06

3. Do not connect wires of different gauge to the same ground terminal. Looseness in the connection may deteriorate protection.
4. Outside of the unit, keep transmission wire at least 5 in. away from power supply wire. The equipment may malfunction if subjected to electrical (external) noise.
5. For remote controller wire, refer to the “INSTALLATION MANUAL OF REMOTE CONTROLLER” attached to the remote controller.

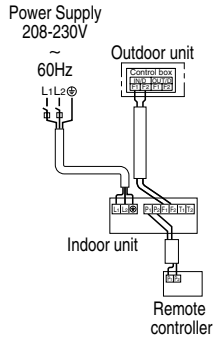
10-2 WIRING EXAMPLE

- Fit the power supply wire of each unit with a switch and fuse as shown in the drawing.

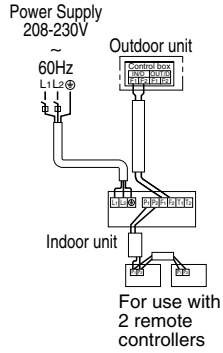
COMPLETE SYSTEM EXAMPLE



1. When using 1 remote controller for 1 indoor unit. (Normal operation)



2. When using 2 remote controllers for 1 indoor unit.



⚠ NOTE

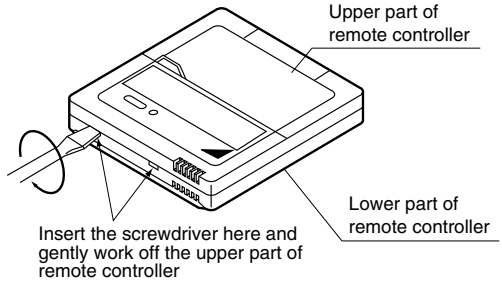
1. A single switch can be used to supply power to units on the same system. However, branch switches and branch circuit breakers must be selected carefully.
2. Do not ground the equipment on gas pipes, water pipes or lightning rods, or crossground with telephones. Improper grounding could result in electric shock.

10-3 CONTROL BY 2 REMOTE CONTROLLERS (Controlling 1 indoor unit by 2 remote controllers)

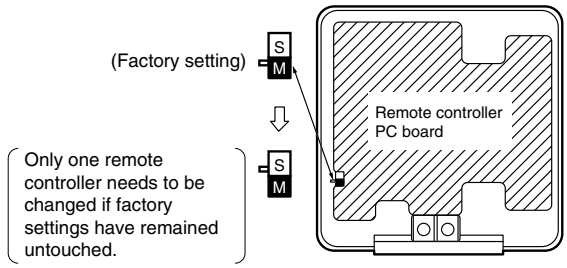
- When using 2 remote controllers, one must be set to “MAIN” and the other to “SUB”.

MAIN/SUB CHANGEOVER

(1) Insert a ⊖ screw driver into the recess between the upper and lower part of remote controller and, working from the 2 positions, pry off the upper part.
The remote controller PC board is attached to the upper part of remote controller.



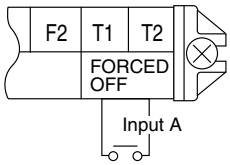
(2) Turn the MAIN/SUB changeover switch on one of the two remote controllers PC boards to “S”.
(Leave the switch of the other remote controller set to “M”.)



10-4 COMPUTERISED CONTROL (FORCED OFF AND ON/OFF OPERATION)

See “FIELD SETTING” on page 12 for local settings.

(1) Wire specifications and how to perform wiring
- Connect the input from outside to terminals T1 and T2 of the transmission terminal block.



Wire specification	Sheathed vinyl wire or cable (2 wires)
Gauge	AWG 18-16
Length	Max. 328ft.
External terminal	Contact that can ensure the minimum applicable load of 15V DC, 10mA.

(2) Actuation
- The following table explains FORCED OFF and ON/OFF OPERATIONS in response to Input A.

FORCED OFF	ON/OFF OPERATION
Input “ON” stops operation (impossible by remote controllers.)	Input OFF → ON turns ON unit.
Input OFF enables control by remote controller.	Input ON → OFF turns OFF unit.

(3) How to select FORCED OFF and ON/OFF OPERATION
- Turn the power on and then use the remote controller to select operation.

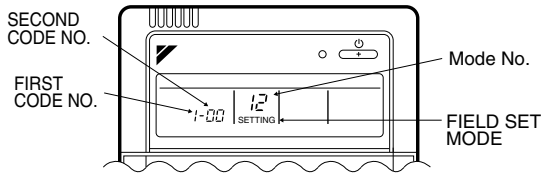
10-5 CENTRALIZED CONTROL

- For centralized control, it is necessary to designate the group No. For details, refer to the manual of each optional controllers for centralized control.

11. FIELD SETTING

Make sure the control box lids are closed on the indoor and outdoor units.
Field setting must be made from the remote controller in accordance with the installation condition.

- Setting can be made by changing the “Mode No.”, “FIRST CODE NO.”, and “SECOND CODE NO.”.
- For setting and operation, refer to the “FIELD SETTING” in the installation manual of the remote controller.



- Set the remote controller to the field set mode. For details, refer to the “HOW TO SET IN THE FIELD”, in the remote controller manual.
- When in the field set mode, select mode No. 12, then set the first code (switch) No. to “1”. Then set second code (position) No. to “01” for FORCED OFF and “02” for ON/OFF OPERATION. (FORCED OFF at factory set)

SETTING AIR FILTER SIGN

- Remote controllers are equipped with liquid crystal display air filer signs to display the time to clean air filters.
- Change the SECOND CODE NO. according to Table 5 depending on the amount of dirt or dust in the room. (SECOND CODE NO. is factory set to “01” for filter contamination-light)

Table 5

Setting	Spacing time of display air filter sign (long life type)	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Air filter contamination-light	Approx. 2500 hrs	10 (20)	0	01
Air filter contamination-heavy	Approx. 1250 hrs			02

〈**When using wireless remote controllers**〉

- When using wireless remote controllers, wireless remote controller address setting is necessary. Refer to the installation manual attached to the wireless remote controller for setting instructions.

12. INSTALLATION OF THE DECORATION PANEL

Refer to the installation manual attached to the decoration panel.
After installing the decoration panel, ensure that there is no space between the unit body and decoration panel.

13. TEST OPERATION

Refer to the section of "FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED." on page 3.

- Make sure if the service lids are closed on the indoor and outdoor units.
- After finishing the construction of refrigerant pipe, drain pipe and electric wire, conduct the check operation referring to the installation manual of the outdoor unit.
- The operation lamp of the remote controller will flash when a malfunction occurs. Check the malfunction code on the liquid crystal display to identify the point of trouble. An explanation of malfunction codes and the corresponding trouble is provided in the installation manual of the outdoor unit.
  If any of the items in Table 6 are displayed, there may be a problem with the wiring or power, so check the wiring again.

Table 6

Remote control display	Content
" [ ] " (under centralized control) is lit up.	• There is a short circuit at the FORCED OFF terminals (T1, T2)
"U4" is lit up "UH" is lit up	• The power on the outdoor unit is off. • The outdoor unit has not been wired for power supply. • Incorrect wiring for the transmission wiring and / or FORCED OFF wiring. • The transmission wiring is cut.
No display	• The power on the indoor unit is off. • The indoor unit has not been wired for power supply. • Incorrect wiring for the remote controller wiring, the transmission wiring and / or the FORCED OFF wiring. • The remote controller wiring is cut.

- If "U3" is lit up, the malfunction code shows the check operation has not been performed yet.

13-1 TEST OPERATION

(1) Make sure if the gas side and the liquid side stop valves are open.
(2) Electrify crank case heater for 6 hours.
(3) Confirm function of unit according to the operation manual.

⚠ NOTE

- Refer to the diagnoses below if the unit does not operate properly.

13-2 CAUTIONS FOR SERVICING

With the power on. Troubles can be monitored on the remote controller or the LED's on the PC board of the indoor unit.

■ Trouble shooting with the display on the liquid crystal display remote controller.

(1) With the wired remote controller. (NOTE 1)
When the operation stops due to trouble, operation lamp flashed, and "" and the Malfunction code are indicated on the liquid crystal display. In such a case, diagnose the fault contents by referring to the table on the Malfunction code list it case of group control, the unit No. is displayed so that the indoor unit no with the trouble can be recognized. (NOTE 2)

(2) With the wireless remote controller.
(Refer also to the operation manual attached to the wireless remote controller)
When the operation stops due to trouble, the display on the indoor unit flashes. In such a case, diagnose the fault contents with the table on the Malfunction code list looking for the Malfunction code which can be found by following procedures. (NOTE 2)
(1) Press the INSPECTION /TEST OPERATION button, "" is displayed and " 0 " flashes.
(2) Press the PROGRAMMING TIME button and find the unit No. which stopped due to trouble.
Number of beeps 3 short beeps Perform all the following operations

1 short beep	Perform (3) and (6)
1 long beep	No trouble

(3) Press the OPERATION MODE SELECTOR button and upper figure of the Malfunction code flashes.
(4) Continue pressing the PROGRAMMING TIME button unit it makes 2 short beeps and find the upper code.
(5) Press the Operation selector button and lower figure of the Malfunction code flashes.
(6) Continue pressing the PROGRAMMING TIME button unit it makes a long beep and find the lower code.
- A long beep indicate the Malfunction code.

NOTE)

1. In case wired remote controller. Press the INSPECTION / TEST OPERATION button on remote controller, "" starts flashing.
2. Keep down the ON/OFF button for 5 seconds or longer in the inspection mode and the above trouble history disappears, after the trouble code goes on and off twice, followed by the code " 00 "(normal).
   The display changes from the inspection mode to the normal mode.

13-3 MALFUNCTION CODE LIST

- For places where the Malfunction code is left blank, the "" indication is not displayed. Though the system continues operating, be sure to inspect the system and make repairs as necessary.
- Depending on the type of indoor or outdoor unit, the malfunction code may or may not be displayed.

Code	Malfunction/Remarks
A1	Indoor unit's PC board faulty
A3	Drain water level abnormal
A6	Indoor fan motor overloaded, overcurrent or locked.
A7	Air flow direction adjust motor is fault.
A9	Drive for electronic expansion valve is fault.
AJ	Type set improper
	Capacity data is wrongly preset. Or there is nothing programmed in the data hold IC.
C4	Sensor R2T for heat exchanger temperature is fault.
C5	Sensor R3T for heat exchanger temperature is fault.
C9	Sensor R1T for suction air temperature is fault.
CJ	Sensor for remote controller is fault.
	The remote controller thermistor does not function, but the system thermo run is possible.
E3	High pressure abnormal (outdoor unit)
E4	Low pressure abnormal (outdoor unit)

E5	Compressor motor lock malfunction
E7	Outdoor fan motor lock malfunction Outdoor fan instantaneous overcurrent malfunction
E9	Electronic expansion valve faulty (outdoor unit)
F3	Discharge pipe temperature abnormal (outdoor unit)
F6	The refrigerant is overcharged.
H9	Outdoor air thermistor faulty (outdoor unit)
J3	Discharge pipe thermistor faulty (outdoor unit)
J5	Suction pipe thermistor faulty (outdoor unit)
J6	Heat exchanger thermistor faulty (outdoor unit)
J9	Sensor for heat exchanger is fault.
JA	Sensor for high pressure is fault.
JC	Sensor for low pressure is fault.
L4	Overheated heat-radiating fin (outdoor unit)
	Inverter cooling defect.
L5	Instantaneous overcurrent (outdoor unit)
	Possible earth fault or short circuit in the compressor motor.
L8	Electric thermal (outdoor unit)
	Possible electrical overload in the compressor or cut line in the compressor motor.
L9	Stall prevention (outdoor unit)
	Compressor possibly locked.
LC	Transmission malfunction between the outdoor control units' inverters (outdoor unit)
P1	Open-phase (outdoor unit)
P3	PC board temperature sensor malfunction (outdoor unit)
P4	Heat-radiating fin temperature sensor malfunction (outdoor unit)
PJ	Type set improper (outdoor unit)
	Capacity data is wrongly preset. Or there is nothing programmed in the data hold IC.
U0	Suction pipe temperature abnormal
U2	Power source voltage malfunction
	Includes the defect in K1M.
U3	The check operation has not performed.
U4 UF	Transmission error (indoor unit – outdoor unit) Miswiring between indoor and outdoor units or malfunction of the PC board mounted on the indoor and the outdoor units. If UF is shown, the wire between the indoor and outdoor units is not properly wired. Therefore, immediately disconnect the power supply and correct the wire. (The compressor and the fan mounted on the outdoor unit may start operation independent of the remote controller operation.) The power is not supplied to outdoor unit.
U9	Same transmission for in / outdoor unit is fault.
UA	Miss setting for multi system Setting is wrong for selector switch of multi-system. (see switch SS2 on the main unit's PC board)

14.2 FCQ36MVJU / FCQ42MVJU

DAIKIN

SPLIT SYSTEM Air Conditioners Installation manual

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1. SAFETY CONSIDERATIONS

Please read these “SAFETY CONSIDERATIONS” carefully before installing air conditioning equipment and be sure to install it correctly. After completing the installation, make sure that the unit operates properly during the start-up operation. Please instruct the customer on how to operate the unit and keep it maintained.
Also, inform customers that they should store this installation manual along with the operation manual for future reference.
This air conditioner comes under the term “appliances not accessible to the general public”.
Meaning of danger, warning, caution and note symbols.

⚠ **DANGER** .....Indicates an imminently hazardous situation which,if not avoided, will result in death or serious injury.

⚠ **WARNING** .....Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION** .....Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be sued to alert against unsafe practices.

⚠ **NOTE** .....Indicates situation that may result in equipment or property-damage-only accidents.

⚠ DANGER

- **Do not ground units to water pipes, telephone wires or lightning rods because incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.**
- **Do not install unit in an area where flammable materials are present due to risk of explosion resulting in serious injury or death.**
- **Refrigerant gas in heavier than air and displaces oxygen. A massive leak could lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.**
- **If the refrigerant gas leaks during installation, ventilate the area immediately.**
  Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could result in severe injury or death.
- **After completing the installation work, check that the refrigerant gas does not leak.**
  Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could result in severe injury or death.
- **Safely dispose of the packing materials.**
  Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries. Tear apart and throw away plastic packaging bags so that children will not play with them. Children playing with plastic bags face the danger of death by suffocation.

⚠ WARNING

- **Ask your dealer or qualified personnel to carry out installation work. Do not try to install the air conditioner by yourself.**
  Improper installation may result in water leakage, electric shocks or fire.
- **Perform installation work in accordance with this installation manual.**
  Improper installation may result in water leakage, electric shocks or fire.
- **Be sure to use only the specified accessories and parts for installation work.**
  Failure to use the specified parts may result in water leakage, electric shocks, fire or the unit falling.
- **Install the air conditioner on a foundation strong enough to withstand the weight of the unit.**
  A foundation of insufficient strength may result in the equipment falling and causing injuries.
- **Carry out the specified installation work after considering strong considering winds, typhoons or earthquakes.**
  Improper installation work may result in the equipment falling and causing accidents.
- **Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual.**
  An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.
- **Make sure that all wiring is secured, the specified wires are used, and no external forces act on the terminal connections or wires.**
  Improper connections or installation may result in fire.
- **When wiring the power supply and connecting the remote controller wire and transmission wire, position the wires so that the control box lid can be securely fastened.**
  Improper positioning of the control box lid may result in electric shocks, fire or the terminals overheating.
- **Before touching electrical parts, turn off the unit.**
- **Do not touch the switch with wet fingers.**
  Touching a switch with wet fingers can cause electric shock.
- **Be sure to install an earth leakage breaker.**
  Failure to install an earth leakage breaker may result in electric shocks, or fire.

- **Do not install the air conditioner in the following locations:**
  (a) where a mineral oil mist or an oil spray or vapor is produced, for example in a kitchen
  Plastic parts may deteriorate and fall off or result in water leakage.
  (b) where corrosive gas, such as sulfurous acid gas, is produced
  Corroding copper pipes or soldered parts may result in refrigerant leakage.
  (c) near machinery emitting electromagnetic waves
  Electromagnetic waves may disturb the operation of the control system and result in a malfunction of the equipment.
  (d) where flammable gases may leak, where there are carbon fiber or ignitable dust suspensions in the air, or where volatile flammables such as thinner or gasoline are handled.
  Operating the unit in such conditions may result in fire.
- **Heat exchanger fins are sharp to cut.**
  To avoid injury wear gloves to cover the fins when working around them.
- **Refrigerant pipes may be very hot or very cold during or immediately after operation.**
  Touching them could result in burns or frostbite. To avoid injury give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.

⚠ CAUTION

- **While following the instructions in this installation manual, install drain pipe in order to ensure proper drainage and insulate pipe in order to prevent condensate.**
  Improper drain pipe may result in water leakage and property damage.
- **Be very careful about product transportation.**
  Some products use PP bands for packaging. Do not use any PP bands for a means of transportation. It is dangerous.
- **Safely dispose of the packing materials.**
  Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries.
  Tear apart and throw away plastic packaging bags so that children will not play with them. If children play with a plastic bag which was not torn apart, they face the risk of suffocation.
- **Do not turn off the power immediately after stopping operation.**
  Always wait at least 5 minutes before turning off the power. Otherwise, water leakage and trouble may occur.
- **Make sure to provide for adequate measures in order to prevent that the outdoor unit be used as a shelter by small animals.**
  Small animals making contact with electrical parts can cause malfunctions, smoke or fire. Please instruct the customer to keep the area around the unit clean.

⚠ NOTE

- **Install the indoor and outdoor units, power supply wire and transmission wire at least 3.5ft. away from televisions or radios in order to prevent image interference or noise.**
  (Depending on the radio waves, a distance of 3.5ft. may not be sufficient enough to eliminate the noise.)
- **Remote controller (wireless kit) transmitting distance can result shorter than expected in rooms with electronic fluorescent lamps. (inverter or rapid start types)**
  Install the indoor unit as far away from fluorescent lamps as possible.
- **In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.**
- **Dismantling of the unit, treatment of the refrigerant, oil and eventual other parts, should be done in accordance with the relevant local and national regulations.**

2. BEFORE INSTALLATION

- **When moving the unit while removing it from the packing case, be sure to lift it by the four hanger brackets. Avoid putting any pressure on other parts especially the refrigerant piping.**
- Be sure to check the type of R410A refrigerant to be used before installing the unit. (Using an incorrect refrigerant will prevent normal operation of the unit.)
- The accessories needed for installation must be retained in your custody until the installation work is completed. Do not discard them!
- Decide upon a line of transport.
- Leave the unit inside its packaging while moving, until reaching the installation site. Where unpacking is unavoidable, use a sling of soft material or protective plates together with a rope when lifting, to avoid damage or scratches to the unit.
- When moving the unit at or after opening, hold the unit by the hanger brackets (× 4). Do not apply force to the refrigerant pipe, drain pipe or plastic parts.
- For the installation of an outdoor unit, refer to the installation manual attached to the outdoor unit.
- Do not install or operate the unit in rooms mentioned below.
  - **Laden with mineral oil, or filled with oil vapor or spray like in kitchens. (Plastic parts may deteriorate which could eventually cause the unit to fall out of place, or could lead to leaks.)**
  - **Where corrosive gas like sulfurous gas exists. (Copper tubing and brazed spots may corrode which could eventually lead to refrigerant leaks.)**
  - **Where machines can generate electromagnetic waves. (Control system may malfunction.)**
  - **Where the air contains high levels of salt such as that near the ocean and where voltage fluctuates greatly such as that in factories. Also in vehicles or vessels.**
- This unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment.
  If installed as a household appliance it could cause electromagnetic interference.

⚠ WARNING

- Entrust installation to the place of purchase or a qualified person. Improper installation could lead to leak and, in worse cases, electric shock of fire.
- Use of unspecified parts could lead to the unit falling, leaks and, in worse cases, electric shock or fire.

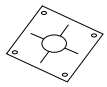
⚠ NOTE

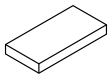
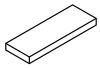
- Be sure to read this manual before installing the indoor unit.
- Be sure to mount an air filter (part to be procured in the field) in the suction air passage in order to prevent water leaking, etc.

2-1 ACCESSORIES

Check the following accessories are included with your unit.

Name	(1) Drain hose	(2) Metal clamp	(3) Washer for hanger bracket	(4) Clamp
Quantity	1 pc.	1 pc.	8 pcs.	4 pcs.
Shape				

Name	(5) Paper pattern for installation	(6) Screws (M5)	(7) Washer fixing plate	Insulation for fitting
Quantity	1 pc.	4 pcs.	4 pcs.	1 each
Shape	Also used as packing material 	For paper pattern for installation		(8) for gas pipe (9) for liquid pipe

Name	Sealing pad		
Quantity	1 each	2 pcs.	
Shape	 (10) Large  (11) Medium	(12) Small	(Other) • Installation manual • Operation manual

2-2 OPTIONAL ACCESSORIES

- The optional decoration panel and remote controller are required for this indoor unit.

Table 1

Model	Optional decoration panel	
	Color	White
FCQ24 · 30 · 36 · 42MVJU	BYC125K-W1	

Table 2

Remote controller	
Wired type	BRC1C71
Wireless type	BRC7C812

FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED.

a. Items to be checked after completion of work

Items to be checked	If not properly done, what is likely to occur.	Check
Are the indoor and outdoor unit fixed firmly?	The units may drop, vibrate or make noise.	
Is the gas leak test finished?	It may result in insufficient cooling.	
Is the unit fully insulated?	Condensate water may drip.	
Does drainage flow smoothly?	Condensate water may drip.	
Does the power supply voltage correspond to that shown on the name plate?	The unit may malfunction or the components burn out.	
Are wiring and piping correct?	The unit may malfunction or the components burn out.	
Is the unit safely grounded?	It may result in electric shock.	
Is wiring size according to specifications?	The unit may malfunction or the components burn out.	
Is something blocking the air outlet or inlet of either the indoor or outdoor units?	It may result in insufficient cooling.	
Are refrigerant piping length and additional refrigerant charge noted down?	The refrigerant charge in the system is not clear.	

b. Items to be checked at time of delivery

Also review the “SAFETY CONSIDERATIONS”

Items to be checked	Check
Did you explain about operations while showing the operation manual to your customer?	
Did you hand the operation manual over to your customer?	

2-3 NOTE TO INSTALLER

- Be sure to instruct customers how to properly operate the unit (especially cleaning filters, operating different functions, and adjusting the temperature) by having them carry out operations themselves while looking at the manual.

3. SELECTING INSTALLATION SITE

Please attach additional thermal insulation material to the unit body when it is believed that the relative humidity in the ceiling exceeds 80%. Use glass wool, polyethylene foam, or similar with a thickness of 3/8 in.. or more as thermal insulation material.

(1) Select an installation site where the following conditions are fulfilled and that meets with your customer’s approval.
- In the upper space (including the back of the ceiling) of the indoor unit where there is no possible dripping of water from the refrigerant pipe, drain pipe, water pipe, etc.
- Where optimum air distribution can be ensured.
- Where nothing blocks the air passage.
- Where condensate can be properly drained.
- Where the false ceiling is not noticeably on an incline.
- Where sufficient clearance for maintenance and service can be ensured.
- Where piping between indoor and outdoor units is possible within the allowable limit. (Refer to the installation manual of the outdoor unit.)

⚠ DANGER

- Do not install unit in an area where flammable materials are present due to the risk explosion resulting in serious injury or death.

⚠ WARNING

- If the supporting structural members are not strong enough to take the unit's weight, the unit could fall out of place and cause serious injury.

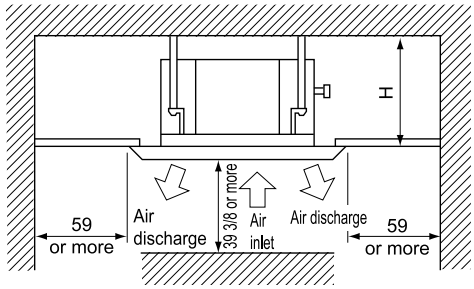
⚠ NOTE

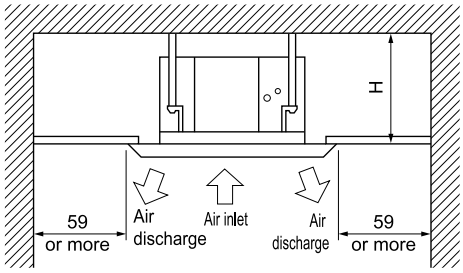
- Install the indoor and outdoor units, power supply wire and connecting wires at least 3.5ft. away from televisions or radios in order to prevent image interference or noise. (Depending on the radio waves, a distance of 3.5ft. may not be sufficient enough to eliminate the noise.)

(2) Ceiling height
This indoor unit may be installed on ceilings up to 10.5 ft. in height.

(3) Use suspension bolts for installation. Check whether the ceiling is strong enough to support the weight of the unit or not. If there is a risk, reinforce the ceiling before installing the unit.
(Installation pitch is marked on the paper pattern for installation. Refer to it to check for points requiring reinforcing.)

[Space required for installation]



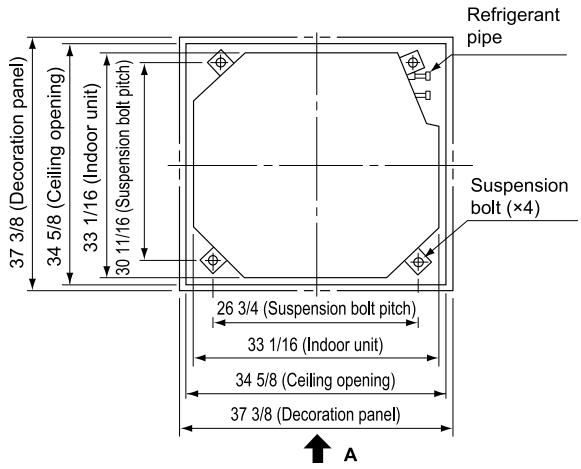


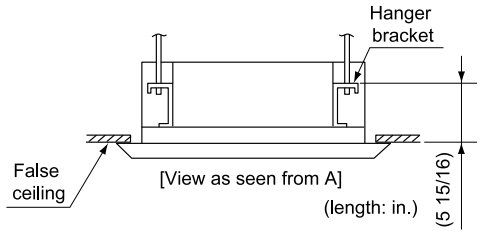
Model	H
FCQ24·30·36·42MVJU	11 3/4 or more

(length: in.)

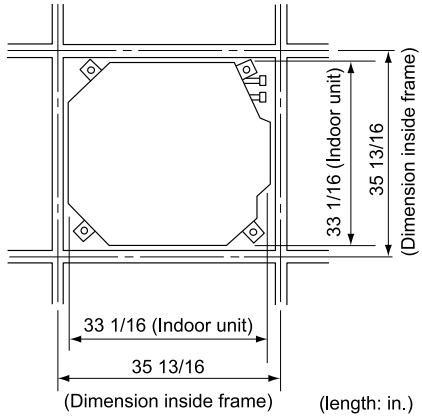
4. PREPARATIONS BEFORE INSTALLATION

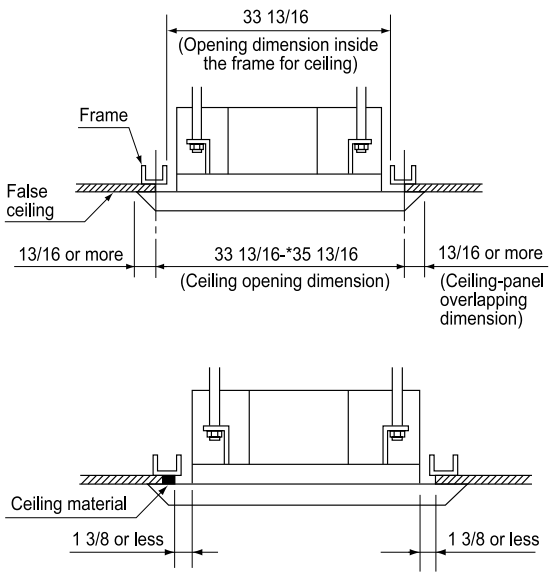
(1) Relation of ceiling opening to unit and suspension bolt position





■ Installation is possible when ceiling opening dimensions is as follows.
- When installing the unit within the frame for fixing false ceiling.





NOTE) Installation is possible with a ceiling dimension of 35 13/16 in. (marked with *). However, to achieve a ceiling-panel overlapping dimension of 13/16 in., the spacing between the ceiling and the unit should be 1 3/8 in. or less. If the spacing between ceiling and the unit is over 1 3/8 in., attach false ceiling to ■ part or recover the ceiling.

(2) Make the ceiling opening needed for installation where applicable. (For existing ceilings)

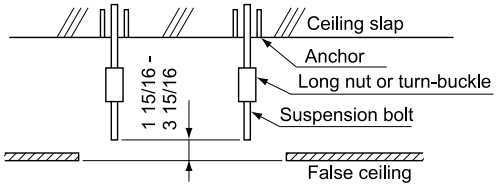
- Refer to the paper pattern for installation (5) for ceiling opening dimensions.
- Create the ceiling opening required for installation. From the side of the opening to the casing outlet, implement the refrigerant and drain pipe and remote controller wire (unnecessary for wireless type) and indoor-outdoor unit casing outlet. Refer to the “REFRIGERANT PIPING WORK (Page 7), DRAIN PIPING WORK (Page 9) and ELECTRIC WIRING WORK (Page 10)”.
- After making an opening in the ceiling, it may be necessary to reinforce ceiling beams to keep the ceiling level and to prevent it from vibrating. Consult the builder for details.

(3) Install the suspension bolts.

(Use either a W3/8 or M10 size bolt)

Use a hole-in anchor for existing ceilings, and a sunken insert, sunken anchor or other field supplied parts for new ceilings to reinforce the ceiling to bear the weight of the unit. Adjust clearance from the ceiling before proceeding further.

〈 Installation example 〉



NOTE) All the above parts are field supplied.

(length: in.)

5. INSTALLATION PROCEDURES FOR FRESH AIR INTAKE DUCT CONNECTION

(1) Cut off the knockout hole on the side plate. Then, cut the inner insulation of the hole portion. **(Refer to Fig. 1)**

(2) Adhere the insulation for opening of unit to the opening. **(Refer to Fig. 2)**

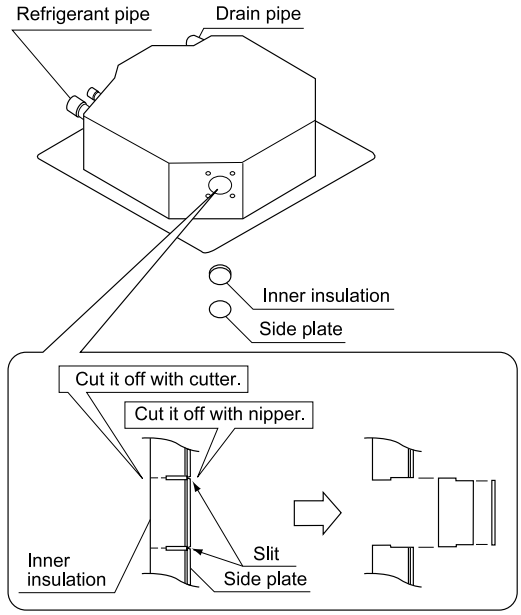


Fig. 1

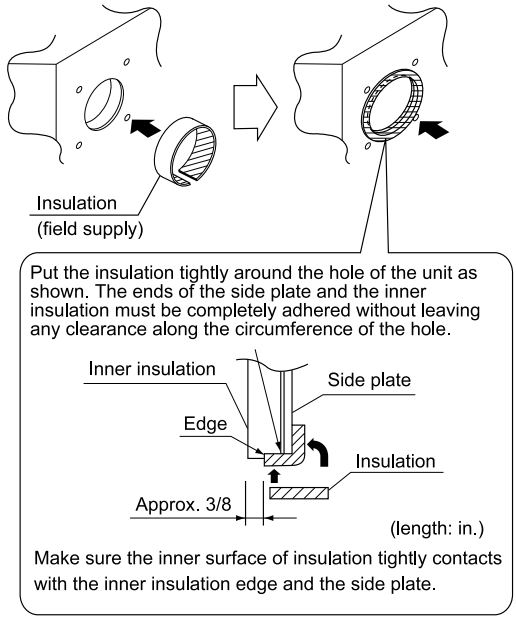

Insulation
(field supply)
Put the insulation tightly around the hole of the unit as shown. The ends of the side plate and the inner insulation must be completely adhered without leaving any clearance along the circumference of the hole.
Inner insulation
Side plate
Edge
Insulation
Approx. 3/8
(length: in.)
Make sure the inner surface of insulation tightly contacts with the inner insulation edge and the side plate.

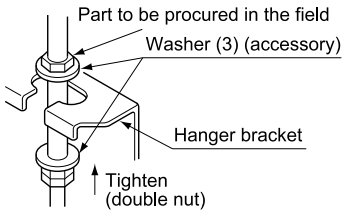
Fig. 2

6. INDOOR UNIT INSTALLATION

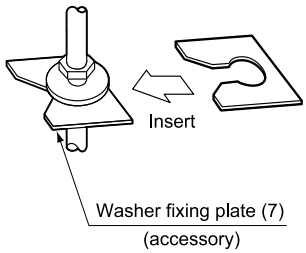
Installing optional accessories (except for the decoration panel) before installing the indoor unit is easier. However, for existing ceilings, install fresh air inlet component kit and branch duct before installing the unit.

(1) Install the indoor unit temporarily.

- Attach the hanger bracket to the suspension bolt. Be sure to fix it securely by using a nut and washer from the upper and lower sides of the hanger bracket.
  The washer fixing plate (7) will prevent the washer from falling.



[Securing the hanger bracket]

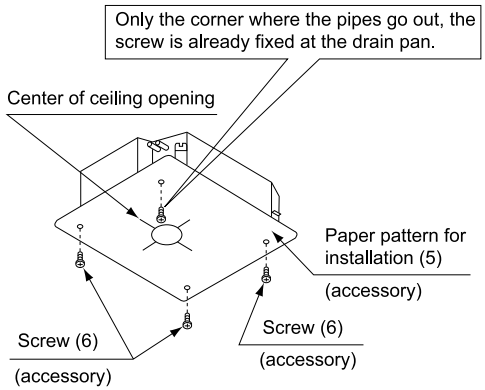


[Securing the washer]

6-1 For new ceilings

(2)

- Refer to the paper pattern for installation (5) for ceiling opening dimension.
  Consult the builder or carpenter for details.
- The center of the ceiling opening is indicated on the paper pattern for installation.
  The center of the unit is indicated on the label attached to the unit and on the paper pattern for installation.
- After removing the packaging material from the 4 corners of the paper pattern for installation (5), fix the paper pattern to the unit with screws (6) (×4).
- Ceiling height is shown on the side of the paper pattern for installation (5). Adjust the height of the unit according to this indication.


Only the corner where the pipes go out, the screw is already fixed at the drain pan.
Center of ceiling opening
Paper pattern for installation (5)
(accessory)
Screw (6)
(accessory)
Screw (6)
(accessory)

〈Ceiling work〉

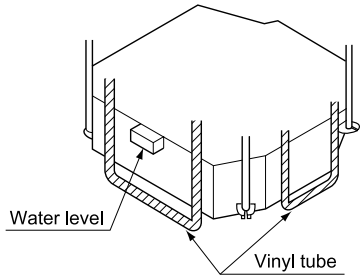
(3) Adjust the unit to the right position for installation.
(Refer to **"PREPARATIONS BEFORE INSTALLATION-(1)"**.) (Page 5)

(4) Check the unit is horizontally level.

- **The indoor unit is equipped with a built-in drain pump and float switch. At each of the unit's 4 corners, verify that it is level by using a water-level or a water-filled vinyl tube.**
  (If the unit is inclined against condensate flow, the float switch may malfunction and cause water to drip.)

(5) Remove the washer fixing plate (7) used for preventing the washer from falling and tighten the upper nut.

(6) Remove the paper pattern for installation (5).



6-2 For existing ceilings

(2) Adjust the height and position of the unit.
(Refer to **"PREPARATIONS BEFORE INSTALLATION-(1)"**.)

(3) Perform steps **(4)**, **(5)** in "**6-1 For new ceilings**".

7. REFRIGERANT PIPING WORK

7-1 GENERAL INSTRUCTIONS

- For refrigerant pipe of outdoor units, see the installation manual attached to the outdoor unit.
- Before refrigerant piping work, check which type of refrigerant is used. Proper operation is not possible if the types of refrigerant are not the same.
- The outdoor unit is charged with refrigerant.

⚠ DANGER

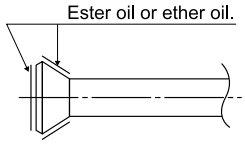
- Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan heater, stove or cooking device. Exposure to this gas could cause severe injury or death.

⚠ NOTE

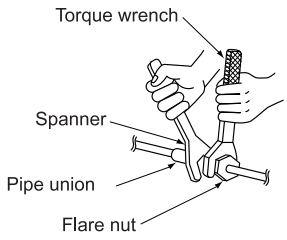
- Use a pipe cutter and flare suitable for the type of refrigerant.
- To prevent dust, moisture or other foreign matter from infiltrating the tube, either pinch the end or cover it with tape.
- Do not allow anything other than the designated refrigerant to get mixed into the refrigerant circuit, such as air, etc. If any refrigerant gas leaks while working on the unit, ventilate the room thoroughly right away.

7-2 Connecting the refrigerant pipe

- When connecting the flare nut, coat the flare both inside and outside with ester oil or ether oil and initially tighten by hand 3 or 4 turns before tightening firmly.

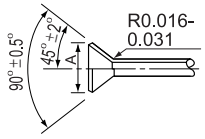


- To prevent flare nut cracking and gas leaking, be sure to use both a spanner and torque wrench together, as shown in the drawing below, when connecting or disconnecting pipes to/ from the unit.



- Refer to the Table 3 for the dimensions of flare shape.
- Refer to the Table 3 to determine the proper tightening torque.

Table 3

Pipe size (in.)	Tightening torque (ft.lbf)	Flare dimensions A (in.)	Flare shape (in.)
ϕ 3/8	24.1 – 29.4	0.504-0.520	
ϕ 5/8	45.6 – 55.6	0.760-0.776	

NOTE

- Apply ester oil or ether oil around the flare portions before connecting.
- The flare nuts used must be those included with the main body.
- Over-tightening may damage the flare and cause a refrigerant leakage.

Not recommended but in case of emergency

You must use a torque wrench but if you are obliged to install the unit without a torque wrench, you may follow the installation method mentioned below.

After the work is finished, make sure to check that there is no gas leak.

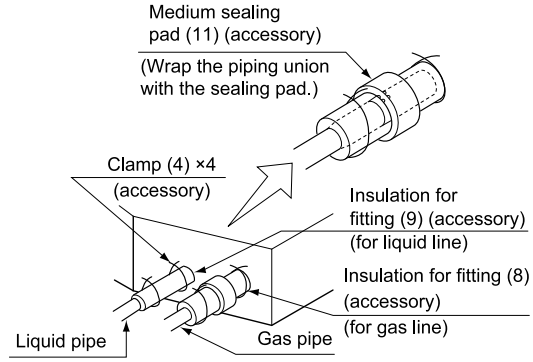
When you keep on tightening the flare nut with a spanner, there is a point where the tightening torque suddenly increases. From that position, further tighten the flare nut the angle shown below:

Table 4

Pipe size (in.)	Further tightening angle	Recommended arm length of tool (in.)
ϕ 3/8	60 to 90 degrees	Approx. 7 7/8
ϕ 5/8	30 to 60 degrees	Approx. 11 13/16

7-3 Piping insulation

- Execute heat insulation work completely on both sides of the gas pipe and the liquid pipe. Otherwise, a water leakage can result sometimes.
- Be sure to use insulation that is designed for use with HVAC Systems.
- Also, in cases where the temperature and humidity of the refrigerant pipe sections might exceed 86°F or RH80%, reinforce the refrigerant insulation. (13/16 in. or thicker) Condensate may form on the surface of the insulating material.
- Check the pipe connector for gas leaking, then insulate it as shown in the drawing below.
- Make absolutely sure to execute heat insulation works on the pipe-connecting section after checking gas leakage by thoroughly studying the following figure and using the attached heat insulating materials for fitting. (Fasten both ends with the clamps (accessory).)
- Wrap the sealing pad (accessory) only around the insulation for the joints on the gas pipe side.

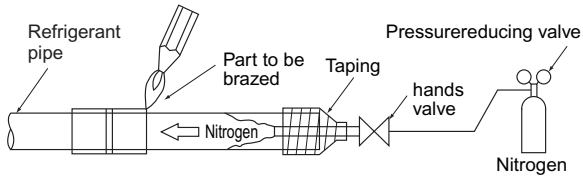

Medium sealing pad (11) (accessory)
(Wrap the piping union with the sealing pad.)
Clamp (4) ×4 (accessory)
Insulation for fitting (9) (accessory) (for liquid line)
Insulation for fitting (8) (accessory) (for gas line)
Liquid pipe
Gas pipe

CAUTION

- Be sure to insulate any field piping all the way to the piping connection inside the unit. Any exposed pipe may cause condensate or burns if touched.

7-4 Brazing refrigerant piping

- Before brazing local refrigerant pipe, nitrogen gas shall be blown through the pipe to expel air from the pipe. If your brazing is done without nitrogen gas blowing, a large amount of oxide film develops inside the pipe, and could cause system malfunction.
- When brazing the refrigerant pipe, only begin brazing after having carried out nitrogen substitution or while inserting nitrogen into the refrigerant pipe. Once this is done, connect the indoor unit with a flared or a flanged connection.
- Nitrogen should be set to 2.9psi. with a pressure-reducing valve if brazing while inserting nitrogen into the pipe.



DANGER

- Use of oxygen may cause an explosion resulting in serious injury or death. Only use nitrogen gas.

NOTE

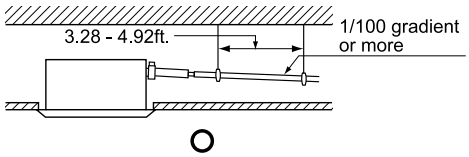
- Do not use flux when brazing refrigerant pipe. Therefore, use the phosphor copper brazing filler metal (BCuP) which does not require flux.
  (Flux has an extremely negative effect on refrigerant piping systems. For instance, if chlorine based flux is used, it will cause pipe corrosion. If the flux contains fluorine, it will damage the refrigerant oil.)

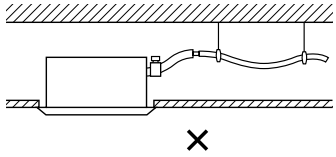
8. DRAIN PIPING WORK

⟨⟨Rig the drain pipe as shown below and take measures against condensate. Improperly rigged pipe could lead to leak and eventually wet furniture and belongings.⟩⟩

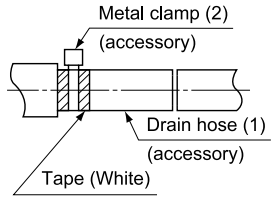
(1) Rig drain pipe

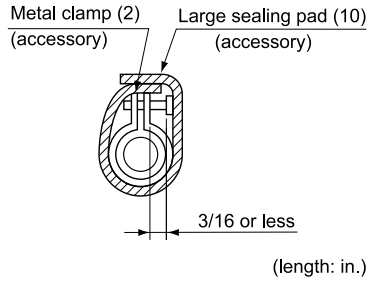
- The diameter of the drain pipe should be greater than or equal to the diameter of the connecting pipe (vinyl tube; pipe size: 1 in.; outer dimension: 1 1/4 in.). (This does not apply to rise.)
- Keep the drain pipe short and sloping downwards at a gradient of at least 1/100 to prevent air pockets from forming.
- If the drain pipe cannot be sufficiently set on a slope, execute the drain raising pipe.
- To keep the drain pipe from sagging, space hanging wires every 3.28 ~ 4.92ft .





- Use the attached drain hose (1) and metal clamp (2). Insert the drain hose into the drain socket, up to the white tape. Tighten the clamp until the screw head is less than 3/16 in. from the hose.
- **Be sure to insulate the 2 below indicated spots. If uninsulated, there is always the possibility of condensate forming and leaking.**
  - The drain pipe inside the building
  - Drain socket
- Wrap the attached sealing pad (10) (Large) over the clamp and drain hose to insulate, as shown in the drawing below.

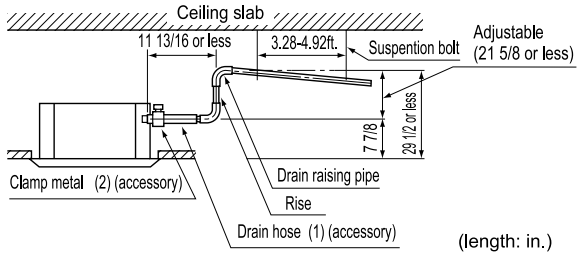




(length: in.)

⟨NOTE FOR DRAIN RAISING PIPE⟩

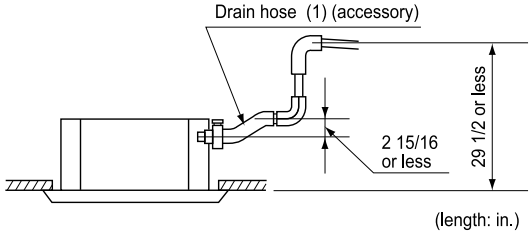
- Install the drain raising pipe at a height of less than 21 5/8 in..
- Install the drain raising pipe at a right angle to the indoor unit and no more than 11 13/16 in. from the unit.



(length: in.)

NOTE

- The incline of attached drain hose (1) should be 2 15/16 in. or less so that the drain socket does not have to stand additional force.



Select converging drain pipe whose gauge is suitable for the operating capacity of the unit.

- Drain pipe connections
  Do not connect the drain pipe directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipe and corrode the heat exchanger.
- Keep in mind that it will become the cause of getting drain pipe blocked if water collects on drain pipe.

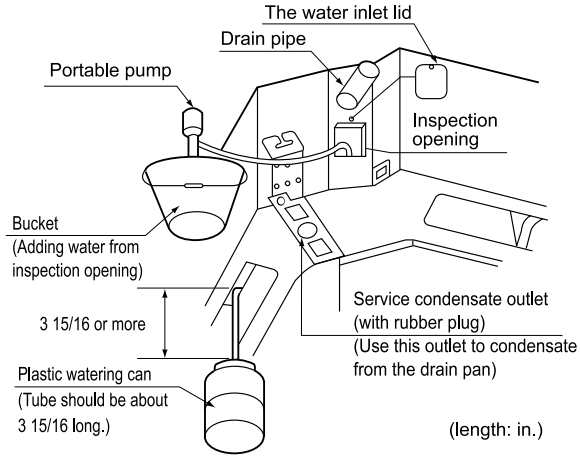
(2) After piping work is finished, check if drainage flows smoothly.
  - Open the water inlet lid, add approximately 37 in^3 of water slowly and check drainage flow.

WHEN ELECTRIC WIRING WORK IS FINISHED

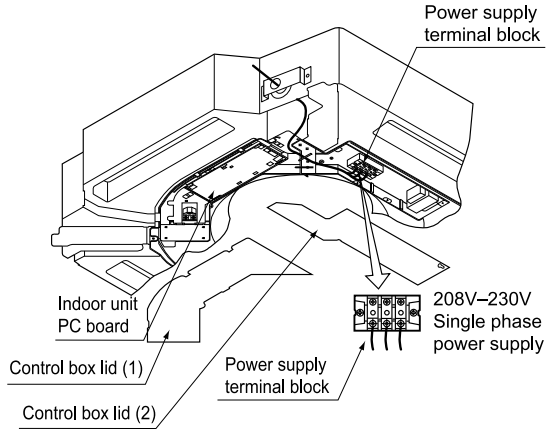
- Check drainage flow during COOL running, explained under "TEST OPERATION".

WHEN ELECTRIC WIRING WORK IS NOT FINISHED

- Remove the control box lids, connect a power supply wire and remote controller wire to the terminals.
  (Refer to the "HOW TO CONNECT WIRES" (Page 11))
  Next, press the INSPECTION/TEST OPERATION button "TEST" on the remote controller. The unit will engage the test operation mode. Press the OPERATION MODE SELECTOR button "⚙" until selecting FAN SPEED CONTROL button "". Then, press the ON/OFF button "⏻". The indoor unit fan and drain pump will start up. Check that the water has drained from the unit. Press "TEST" to go back to the first mode.



〈Adding water through air discharge outlet〉
[Method of adding water]


Power supply terminal block
Indoor unit PC board
208V–230V Single phase power supply
Control box lid (1)
Power supply terminal block
Control box lid (2)

9. ELECTRIC WIRING WORK

9-1 GENERAL INSTRUCTIONS

- All field supplied parts and materials, electric works must conform to local codes.
- Use copper wire only.
- Follow the "WIRING DIAGRAM" attached to the unit body to wire the outdoor unit, indoor unit and the remote controller. For details on hooking up the remote controller, refer to the "INSTALLATION MANUAL OF REMOTE CONTROLLER".
- All wires must be performed by an authorized electrician.
- A circuit breaker capable of shutting down the power supply to the entire system must be installed.
- Be sure to ground the air conditioner.

DANGER

- Do not ground units to water pipes, telephone wires or lightning rods because incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.

9-2 ELECTRICAL CHARACTERISTICS

Units				Power supply		Fan motor	
Model	Hz	Volts	Voltage range	MCA	MFA	KW	FLA
FCQ24MVJU	60	208-230V	Max. 253 Min. 187	1.3	15	0.09	1.0
FCQ30MVJU				1.3	15	0.09	1.0
FCQ36MVJU				1.4	15	0.09	1.1
FCQ42MVJU				1.4	15	0.09	1.1

MCA: Min. Circuit Amps (A) MFA: Max. Fuse Amps (A)
KW: Fan Motor Rated Output (kW) FLA: Full Load Amps (A)

9-3 SPECIFICATIONS FOR FIELD SUPPLIED FUSES AND WIRES

Model	Power supply wiring		Transmission wiring	
	Field fuses	Size	Wire	Size
FCQ24MVJU FCQ30MVJU FCQ36MVJU FCQ42MVJU	15A	Wire size must comply with local codes.	Sheathed wire (2 wires)	AWG 18-16

Allowable length of transmission wire and remote controller wire are as follows.

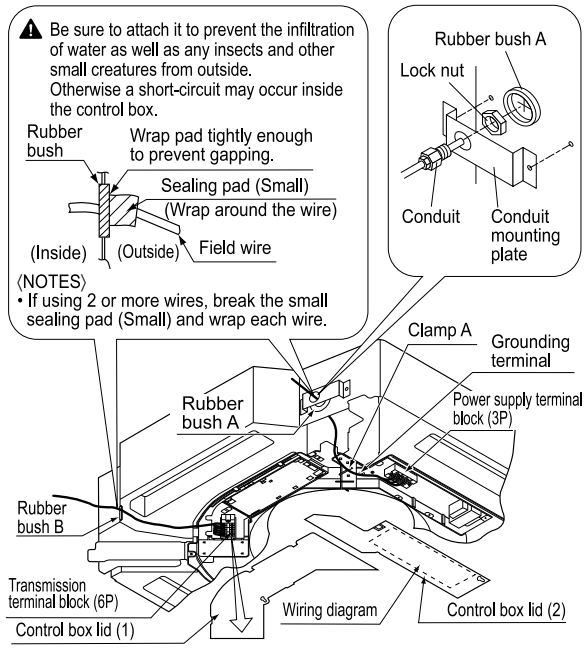
(1) Outdoor unit – Indoor unit:
Max. 3280 ft.
(2) Indoor unit – Remote controller:
Max. 1640 ft.

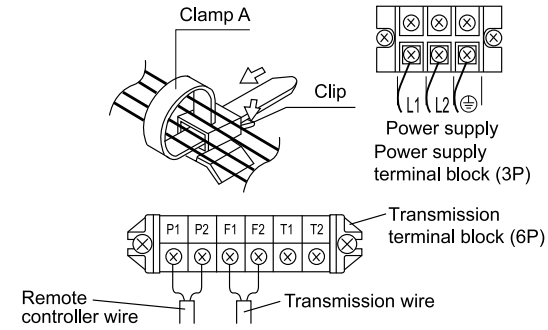
10. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER

10-1 HOW TO CONNECT WIRES

〈Methods of wiring power supply, units and connecting remote controller wires〉

- Power supply wire
  Remove the control box lid (2) and connect wires to the power supply terminal block (3P) inside. In doing this, pull the wires inside through rubber bush A and clamp the wires along with other wires using clamp A, untightening the clip of clamp A by pressing. After the connection, tighten clamp A as before.
- Transmission wire and remote controller wire
  Remove the control box lid (1) and pull the wires inside through rubber bush B and connect to the transmission terminal block (6P).
- After connection, attach sealing pad
  (Be sure to attach it to prevent water from infiltrating the unit from the outside.)


Be sure to attach it to prevent the infiltration of water as well as any insects and other small creatures from outside.
Otherwise a short-circuit may occur inside the control box.
Rubber bush
Wrap pad tightly enough to prevent gapping.
Sealing pad (Small)
(Wrap around the wire)
(Inside)
(Outside)
Field wire
〈NOTES〉
• If using 2 or more wires, break the small sealing pad (Small) and wrap each wire.
Rubber bush A
Lock nut
Conduit
Conduit mounting plate
Clamp A
Grounding terminal
Power supply terminal block (3P)
Rubber bush A
Rubber bush B
Transmission terminal block (6P)
Control box lid (1)
Wiring diagram
Control box lid (2)



⚠ CAUTION

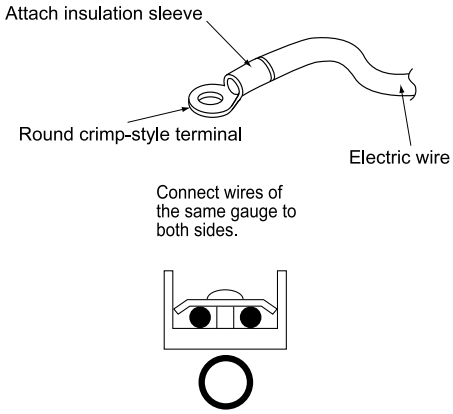
- Even if the control box lid (1)(2) is removed, pull the remote controller wire, transmission wire and the power supply wire inside the unit so that the wires do not come into contact with the opening section of the metal casing.
- Pass conduits through the wall and secure along with the refrigerant pipe in order to prevent external pressure being applied to transmission wire and power supply wire.
- Arrange the wires and fix a lid firmly so that the lid does not float during wiring work.
- Do not clamp remote controller wire and transmission wire together with power supply wire. Doing so may cause malfunction.
- Remote controller wire, transmission wire and power supply wire should be located at least 5 in. from other electric wires. Not following this guideline may result in malfunction due to electrical noise.

⚠ WARNING

- Never connect power supply wiring to the terminal block for remote controller wiring as this could damage the entire system.
- Use only specified wire and connect wires to the terminal tightly. Be careful wires do not place external stress on terminals. Keep wires in neat order so as to not obstruct other equipment. Make sure that the electric box lid fits tightly. Incomplete connections could result in overheating and, in worse case, result in electric shock or fire.

⚠ NOTE

1. Use round crimp-style terminals for connecting wires to the power supply terminal block.
   If unavailable, observe the following points when wiring.
   - Do not connect wires of different gauge to the same power supply terminal.
     (Looseness in the connection may cause overheating.)



2. Tightening torque for the terminal screws.
   - Use the correct screwdriver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
   - If the terminal screws are tightened too hard, screws might be damaged.
   - Refer to the table below for the tightening torque of the terminal screws.

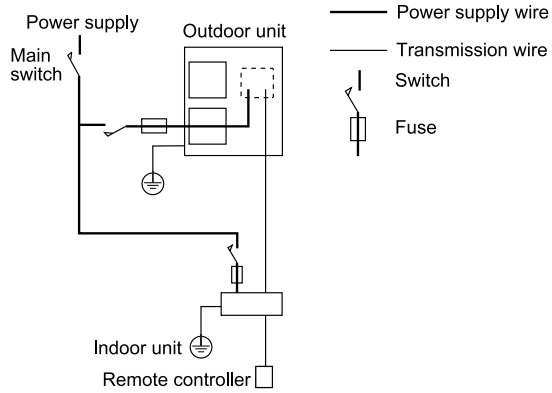
Terminal	Size	Tightening torque (ft.lbf)
Transmission terminal block (6P)	M3.5	0.58 – 0.72
Power supply terminal block (3P)	M4	0.87 – 1.06

3. Do not connect wires of different gauge to the same ground terminal. Looseness in the connection may deteriorate protection.
4. Outside of the unit, keep transmission wire at least 5 in. away from power supply wire. The equipment may malfunction if subjected to electrical (external) noise.
5. For remote controller wire, refer to the “INSTALLATION MANUAL OF REMOTE CONTROLLER” attached to the remote controller.

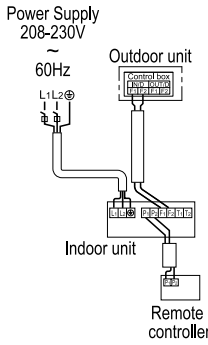
10-2 WIRING EXAMPLE

- Fit the power supply wire of each unit with a switch and fuse as shown in the drawing.

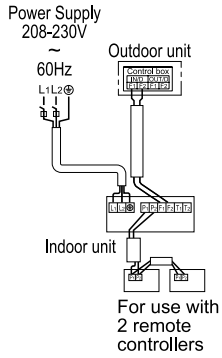
COMPLETE SYSTEM EXAMPLE



1. When using 1 remote controller for 1 indoor unit. (Normal operation)



2. When using 2 remote controllers for 1 indoor unit.



⚠ NOTE

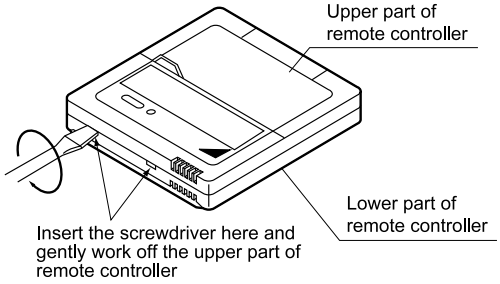
1. A single switch can be used to supply power to units on the same system. However, branch switches and branch circuit breakers must be selected carefully.
2. Do not ground the equipment on gas pipes, water pipes or lightning rods, or crossground with telephones. Improper grounding could result in electric shock.

10-3 CONTROL BY 2 REMOTE CONTROLLERS (Controlling 1 indoor unit by 2 remote controllers)

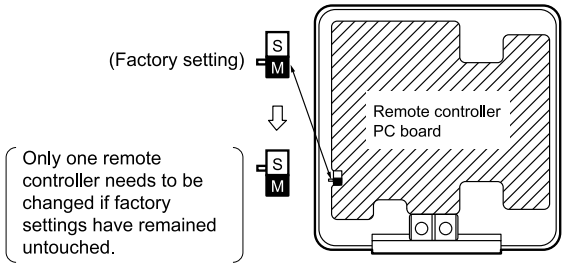
- When using 2 remote controllers, one must be set to “MAIN” and the other to “SUB”.

MAIN/SUB CHANGEOVER

(1) Insert a ⊖ screw driver into the recess between the upper and lower part of remote controller and, working from the 2 positions, pry off the upper part.
The remote controller PC board is attached to the upper part of remote controller.


Upper part of remote controller
Lower part of remote controller
Insert the screwdriver here and gently work off the upper part of remote controller

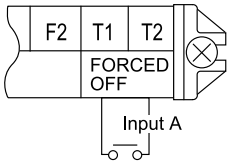
(2) Turn the MAIN/SUB changeover switch on one of the two remote controllers PC boards to “S”.
(Leave the switch of the other remote controller set to “M”.)



10-4 COMPUTERISED CONTROL (FORCED OFF AND ON/OFF OPERATION)

See “FIELD SETTING” on page 13 for local settings.

(1) Wire specifications and how to perform wiring
- Connect the input from outside to terminals T1 and T2 of the transmission terminal block.



Wire specification	Sheathed vinyl wire or cable (2 wires)
Gauge	AWG 18-16
Length	Max. 328ft.
External terminal	Contact that can ensure the minimum applicable load of 15V DC, 10mA.

(2) Actuation
- The following table explains FORCED OFF and ON/OFF OPERATIONS in response to Input A.

FORCED OFF	ON/OFF OPERATION
Input “ON” stops operation (impossible by remote controllers.)	Input OFF → ON turns ON unit.
Input OFF enables control by remote controller.	Input ON → OFF turns OFF unit.

(3) How to select FORCED OFF and ON/OFF OPERATION
- Turn the power on and then use the remote controller to select operation.

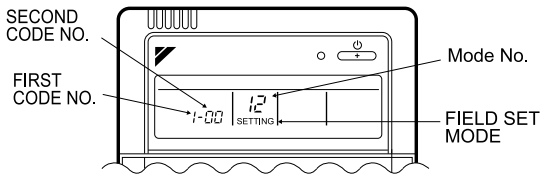
10-5 CENTRALIZED CONTROL

- For centralized control, it is necessary to designate the group No. For details, refer to the manual of each optional controllers for centralized control.

11. FIELD SETTING

Make sure the control box lids are closed on the indoor and outdoor units.
Field setting must be made from the remote controller in accordance with the installation condition.

- Setting can be made by changing the “Mode No.”, “FIRST CODE NO.”, and “SECOND CODE NO.”.
- For setting and operation, refer to the “FIELD SETTING” in the installation manual of the remote controller.



- Set the remote controller to the field set mode. For details, refer to the “HOW TO SET IN THE FIELD”, in the remote controller manual.
- When in the field set mode, select mode No. 12, then set the first code (switch) No. to “1”. Then set second code (position) No. to “01” for FORCED OFF and “02” for ON/OFF OPERATION. (FORCED OFF at factory set)

SETTING AIR FILTER SIGN

- Remote controllers are equipped with liquid crystal display air filer signs to display the time to clean air filters.
- Change the SECOND CODE NO. according to Table 5 depending on the amount of dirt or dust in the room. (SECOND CODE NO. is factory set to “01” for filter contamination-light)

Table 5

Setting	Spacing time of display air filter sign (long life type)	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Air filter contamination-light	Approx. 2500 hrs	10 (20)	0	01
Air filter contamination-heavy	Approx. 1250 hrs			02

⟨When using wireless remote controllers⟩

- When using wireless remote controllers, wireless remote controller address setting is necessary. Refer to the installation manual attached to the wireless remote controller for setting instructions.

12. INSTALLATION OF THE DECORATION PANEL

Refer to the installation manual attached to the decoration panel. After installing the decoration panel, ensure that there is no space between the unit body and decoration panel.

13. TEST OPERATION

Refer to the section of "FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED." on page 4.

- Make sure if the service lids are closed on the indoor and outdoor units.
- After finishing the construction of refrigerant pipe, drain pipe and electric wire, conduct the check operation referring to the installation manual of the outdoor unit.
- The operation lamp of the remote controller will flash when a malfunction occurs. Check the malfunction code on the liquid crystal display to identify the point of trouble. An explanation of malfunction codes and the corresponding trouble is provided in the installation manual of the outdoor unit.
  If any of the items in Table 6 are displayed, there may be a problem with the wiring or power, so check the wiring again.

Table 6

Remote control display	Content
"[ ]" (under centralized control) is lit up.	• There is a short circuit at the FORCED OFF terminals (T1, T2)
"U4" is lit up "UH" is lit up	• The power on the outdoor unit is off. • The outdoor unit has not been wired for power supply. • Incorrect wiring for the transmission wiring and / or FORCED OFF wiring. • The transmission wiring is cut.
No display	• The power on the indoor unit is off. • The indoor unit has not been wired for power supply. • Incorrect wiring for the remote controller wiring, the transmission wiring and / or the FORCED OFF wiring. • The remote controller wiring is cut.

- If "U3" is lit up, the malfunction code shows the check operation has not been performed yet.

13-1 TEST OPERATION

(1) Make sure if the gas side and the liquid side stop valves are open.
(2) Electrify crank case heater for 6 hours.
(3) Confirm function of unit according to the operation manual.

NOTE

- Refer to the diagnoses below if the unit does not operate properly.

13-2 CAUTIONS FOR SERVICING

With the power on. Troubles can be monitored on the remote controller or the LED's on the PC board of the indoor unit.

■ Trouble shooting with the display on the liquid crystal display remote controller.

(1) With the wired remote controller. (NOTE 1)
When the operation stops due to trouble, operation lamp flashed, and " " and the Malfunction code are indicated on the liquid crystal display. In such a case, diagnose the fault contents by referring to the table on the Malfunction code list it case of group control, the unit No. is displayed so that the indoor unit no with the trouble can be recognized. (NOTE 2)

(2) With the wireless remote controller.
(Refer also to the operation manual attached to the wireless remote controller)
When the operation stops due to trouble, the display on the indoor unit flashes. In such a case, diagnose the fault contents with the table on the Malfunction code list looking for the Malfunction code which can be found by following procedures. (NOTE 2)
(1) Press the INSPECTION /TEST OPERATION button, " " is displayed and " 0 " flashes.
(2) Press the PROGRAMMING TIME button and find the unit No. which stopped due to trouble.
Number of beeps 3 short beeps Perform all the following operations
1 short beep Perform (3) and (6)
1 long beep No trouble
(3) Press the OPERATION MODE SELECTOR button and upper figure of the Malfunction code flashes.
(4) Continue pressing the PROGRAMMING TIME button unit it makes 2 short beeps and find the upper code.
(5) Press the Operation selector button and lower figure of the Malfunction code flashes.
(6) Continue pressing the PROGRAMMING TIME button unit it makes a long beep and find the lower code.
• A long beep indicate the Malfunction code.

NOTE)

1. In case wired remote controller. Press the INSPECTION / TEST OPERATION button on remote controller, " " starts flashing.
2. Keep down the ON/OFF button for 5 seconds or longer in the inspection mode and the above trouble history disappears, after the trouble code goes on and off twice, followed by the code "00"(normal).
The display changes from the inspection mode to the normal mode.

13-3 MALFUNCTION CODE

- For places where the Malfunction code is left blank, the "" indication is not displayed. Though the system continues operating, be sure to inspect the system and make repairs as necessary.
- Depending on the type of indoor or outdoor unit, the malfunction code may or may not be displayed.

Code	Malfunction/Remarks
A1	Indoor unit's PC board faulty
A3	Drain water level abnormal
A6	Indoor fan motor overloaded, overcurrent or locked.
A7	Air flow direction adjust motor is fault.
A9	Drive for electronic expansion valve is fault.
AJ	Type set improper
	Capacity data is wrongly preset. Or there is nothing programmed in the data hold IC.
C4	Sensor R2T for heat exchanger temperature is fault.
C5	Sensor R3T for heat exchanger temperature is fault.
C9	Sensor R1T for suction air temperature is fault.
CJ	Sensor for remote controller is fault.
	The remote controller thermistor does not function, but the system thermo run is possible.
E3	High pressure abnormal (outdoor unit)
E4	Low pressure abnormal (outdoor unit)
E5	Compressor motor lock malfunction
E7	Outdoor fan motor lock malfunction Outdoor fan instantaneous overcurrent malfunction
E9	Electronic expansion valve faulty (outdoor unit)
F3	Discharge pipe temperature abnormal (outdoor unit)
F6	The refrigerant is overcharged.
H9	Outdoor air thermistor faulty (outdoor unit)
J3	Discharge pipe thermistor faulty (outdoor unit)
J5	Suction pipe thermistor faulty (outdoor unit)
J6	Heat exchanger thermistor faulty (outdoor unit)
J9	Sensor for heat exchanger is fault.
JA	Sensor for high pressure is fault.
JC	Sensor for low pressure is fault.
L4	Overheated heat-radiating fin (outdoor)
	Inverter cooling defect.
L5	Instantaneous overcurrent (outdoor)
	Possible earth fault or short circuit in the compressor motor.
L8	Electric thermal (outdoor)
	Possible electrical overload in the compressor or cut line in the compressor motor.
L9	Stall prevention (outdoor)
	Compressor possibly locked.
LC	Transmission malfunction between the outdoor control units' inverters (outdoor)
P1	Open-phase (outdoor)
P3	PC board temperature sensor malfunction (outdoor)
P4	Heat-radiating fin temperature sensor malfunction (outdoor)
PJ	Type set improper (outdoor unit)
	Capacity data is wrongly preset. Or there is nothing programmed in the data hold IC.
U0	Suction pipe temperature abnormal
U2	Power source voltage malfunction
	Includes the defect in K1M.
U3	The check operation has not performed.
U4 UF	Transmission error (indoor unit – outdoor unit) Miswiring between indoor and outdoor units or malfunction of the PC board mounted on the indoor and the outdoor units. If UF is shown, the wire between the indoor and outdoor units is not properly wired. Therefore, immediately disconnect the power supply and correct the wire. (The compressor and the fan mounted on the outdoor unit may start operation independent of the remote controller operation.) The power is not supplied to outdoor unit.
U9	Same transmission for in / outdoor unit is fault.
UA	Miss setting for multi system
	Setting is wrong for selector switch of multi-system. (see switch SS2 on the main unit's PC board)

14.3 FHQ18PVJU / FHQ24PVJU / FHQ30PVJU

DAIKIN

SPLIT SYSTEM Air Conditioners Installation manual

CONTENTS

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11. FIELD SETTING 12
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1. SAFETY CONSIDERATIONS

Please read these “SAFETY CONSIDERATIONS” carefully before installing air conditioning equipment and be sure to install it correctly. After completing the installation, make sure that the unit operates properly during the start-up operation. Please instruct the customer on how to operate the unit and keep it maintained.
Also, inform customers that they should store this installation manual along with the operation manual for future reference.
This air conditioner comes under the term “appliances not accessible to the general public”.

Meaning of danger, warning, caution and note symbols.

⚠ **DANGER** ..... Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING** ..... Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION** ..... Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be sued to alert against unsafe practices.

⚠ **NOTE** ..... Indicates situation that may result in equipment or property-damage-only accidents.

⚠ DANGER

- **Do not ground units to water pipes, telephone wires or lightning rods because incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.**
- **Do not install unit in an area where flammable materials are present due to risk of explosion resulting in serious injury or death.**
- **Refrigerant gas is heavier than air and displaces oxygen. A massive leak could lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.**
- **If the refrigerant gas leaks during installation, ventilate the area immediately.**
  Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could result in severe injury or death.
- **After completing the installation work, check that the refrigerant gas does not leak.**
  Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could result in severe injury or death.
- **Safely dispose of the packing materials.**
  Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries. Tear apart and throw away plastic packaging bags so that children will not play with them. Children playing with plastic bags face the danger of death by suffocation.

⚠ WARNING

- **Ask your dealer or qualified personnel to carry out installation work. Do not try to install the air conditioner by yourself.**
  Improper installation may result in water leakage, electric shocks or fire.
- **Perform installation work in accordance with this installation manual.**
  Improper installation may result in water leakage, electric shocks or fire.
- **Be sure to use only the specified accessories and parts for installation work.**
  Failure to use the specified parts may result in water leakage, electric shocks, fire or the unit falling.
- **Install the air conditioner on a foundation strong enough to withstand the weight of the unit.**
  A foundation of insufficient strength may result in the equipment falling and causing injuries.
- **Carry out the specified installation work after considering strong winds, typhoons or earthquakes.**
  Improper installation work may result in the equipment falling and causing accidents.
- **Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual.**
  An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.
- **Make sure that all wiring is secured, the specified wires are used, and no external forces act on the terminal connections or wires.**
  Improper connections or installation may result in fire.
- **When wiring the power supply and connecting the remote controller wire and transmission wire, position the wires so that the control box lid can be securely fastened.**
  Improper positioning of the control box lid may result in electric shocks, fire or the terminals overheating.

C: 3PN06240-12Q

- **Before touching electrical parts, turn off the unit.**
- **Do not touch the switch with wet fingers.**
  Touching a switch with wet fingers can cause electric shock.
- **Be sure to install an earth leakage breaker.**
  Failure to install an earth leakage breaker may result in electric shocks, or fire.
- **Do not install the air conditioner in the following locations :**
  (a) where a mineral oil mist or an oil spray or vapor is produced, for example in a kitchen.
  Plastic parts may deteriorate and fall off or result in water leakage.
  (b) where corrosive gas, such as sulfurous acid gas, is produced.
  Corroding copper pipes or soldered parts may result in refrigerant leakage.
  (c) near machinery emitting electromagnetic waves.
  Electromagnetic waves may disturb the operation of the control system and result in a malfunction of the equipment.
- **Refrigerant pipes may be very hot or very cold during or immediately after operation.**
  Touching them could result in burns or frostbite. To avoid injury give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.

⚠ CAUTION

- **Install drain pipe in order to ensure proper drainage and do the thermal insulation of the pipe in order to prevent condensate.**
  Improper drain pipe may result in water leakage and property damage.
- **Be very careful about product transportation.**
  Some products use PP bands for packaging. Do not use any PP bands for a means of transportation. It is dangerous.
- **Safely dispose of the packing materials.**
  Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries.
  Tear apart and throw away plastic packaging bags so that children will not play with them. If children play with a plastic bag which was not torn apart, they face the risk of suffocation.
- **Do not turn off the power immediately after stopping operation.**
  Always wait at least 5 minutes before turning off the power. Otherwise, water leakage and trouble may occur.
- **Make sure to provide for adequate measures in order to prevent that the outdoor unit be used as a shelter by small animals.**
  Small animals making contact with electrical parts can cause malfunctions, smoke or fire. Please instruct the customer to keep the area around the unit clean.

⚠ NOTE

- **Install the indoor and outdoor units, power supply wire and transmission wire at least 3.5 ft. away from televisions or radios in order to prevent image interference or noise.**
  (Depending on the radio waves, a distance of 3.5 ft. may not be sufficient enough to eliminate the noise.)
- **Remote controller (wireless kit) transmitting distance can result shorter than expected in rooms with electronic fluorescent lamps. (inverter or rapid start types)**
  Install the indoor unit as far away from fluorescent lamps as possible.
- **In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.**
- **Dismantling of the unit, treatment of the refrigerant, oil and eventual other parts, should be done in accordance with the relevant local and national regulations.**

2. BEFORE INSTALLATION

- **When moving the unit while removing it from the packing case, be sure to lift it by the four hanger brackets. Avoid putting any pressure on other parts especially the refrigerant piping.**
- Be sure to check the type of refrigerant to be used before installing the unit. (Using an incorrect refrigerant will prevent normal operation of the unit.)
- The accessories needed for installation must be retained in your custody until the installation work is completed. Do not discard them!
- Decide upon a line of transport.
- Leave the unit inside its packaging while moving, until reaching the installation site. Where unpacking is unavoidable, use a sling of soft material or protective plates together with a rope when lifting, to avoid damage or scratches to the unit.
- When selecting installation site, refer to the paper pattern.
- For the installation of an outdoor unit, refer to the installation manual attached to the outdoor unit.
- Do not install or operate the unit in rooms mentioned below.
  - **Laden with mineral oil, or filled with oil vapor or spray like in kitchens. (Plastic parts may deteriorate which could eventually cause the unit to fall out of place, or could lead to leaks.)**
  - **Where corrosive gas like sulfurous gas exists.**
  - **(Copper tubing and brazed spots may corrode which could eventually lead to refrigerant leaks.)**
  - **Where machines can generate electromagnetic waves. (Control system may malfunction.)**
  - **Where the air contains high levels of salt such as that near the ocean and where voltage fluctuates greatly such as that in factories. Also in vehicles or vessels.**
- This unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment.
  If installed as a household appliance it could cause electromagnetic interference.

⚠ WARNING

- Entrust installation to the place of purchase or a qualified person. Improper installation could lead to leak and, in worse cases, electric shock of fire.
- Use of unspecified parts could lead to the unit falling, leaks and, in worse cases, electric shock or fire.

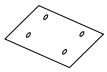
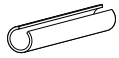
⚠ NOTE

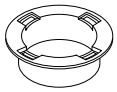
- Be sure to read this manual before installing the indoor unit.
- Be sure to mount an air filter (part to be procured in the field) in the suction air passage in order to prevent water leaking, etc.

2-1 ACCESSORIES

Check the following accessories are included with your unit.

Name	(1) Drain pipe	(2) Metal clamp	(3) Washer for hanger bracket	(4) Clamp
Quantity	1 pc.	1 pc.	8 pcs.	9 pcs.
Shape				

Name	(5) Paper pattern for installation	Insulation pipe cover	Sealing pad
Quantity	1 pc.	1 each	1 each
Shape		(6) For gas pipe  (7) For liquid pipe	(8) Large (9) Small

Name	(10) Resin bush	(11) Insulating tube	
Quantity	1 pc.	3 pcs.	(Other) • Operation manual • Installation manual
Shape		For wire	

2-2 OPTIONAL ACCESSORIES

- The remote controller are required for this indoor unit in Table 1.
- These are 2 types of remote controllers : wired and wireless. Select a remote controller according to customer request and install in an appropriate place.

Table 1

Remote controller	
Wired type	BRC1C71
Wireless type	BRC7E83

NOTE

- If you wish to use a remote controller that is not listed in “Table 1” on page 4, select a suitable remote controller after consulting catalogs and technical materials.

FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED.

a. Items to be checked after completion of work

Items to be checked	If not properly done, what is likely to occur	Check
Are the indoor and outdoor unit fixed firmly?	The units may drop, vibrate or make noise.	
Is the gas leak test finished?	It may result in insufficient cooling.	
Is the unit fully insulated?	Condensate water may drip.	
Does drainage flow smoothly?	Condensate water may drip.	
Does the power supply voltage correspond to that shown on the name plate?	The unit may malfunction or the components burn out.	
Are wiring and piping correct?	The unit may malfunction or the components burn out.	
Is the unit safely grounded?	It may result in electric shock.	
Is wiring size according to specifications?	The unit may malfunction or the components burn out.	
Is something blocking the air outlet or inlet of either the indoor or outdoor units?	It may result in insufficient cooling.	
Are refrigerant piping length and additional refrigerant charge noted down?	The refrigerant charge in the system is not clear.	

b. Items to be checked at time of delivery

∗ Also review the “SAFETY CONSIDERATIONS”

Items to be checked	Check
Did you explain about operations while showing the operation manual to your customer?	
Did you hand the instruction manual over to your customer?	

2-3 NOTE TO THE INSTALLER

Be sure to instruct customers how to properly operate the unit (especially cleaning filters, operating different functions, and adjusting the temperature) by having them carry out operations themselves while looking at the manual.

3. SELECTING INSTALLATION SITE

Please attach additional insulation pipe cover to the unit body when it is believed that the relative humidity in the ceiling exceeds 80%. Use glass wool, polyethylene foam, or similar with a thickness of 3/8 in.. or more as insulation pipe cover.

(1) Select an installation site where the following conditions are fulfilled and that meets your customer’s approval.
- Where optimum air distribution can be ensured.
- Where nothing blocks air passage.
- Where condensate can be properly drained.
- Where the ceiling is strong enough to bear the indoor unit weight.
- Where the false ceiling is not noticeably on an incline.
- Where sufficient clearance for maintenance and service can be ensured.

DANGER

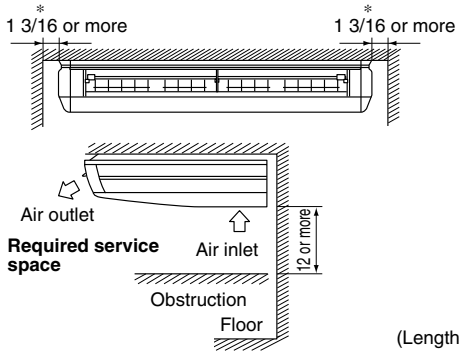
- Do not install unit in an area where flammable materials are present due to the risk explosion resulting in serious injury or death.

WARNING

- If the supporting structural members are not strong enough to take the unit’s weight, the unit could fall out of place and cause serious injury.

NOTE

- When a margin is in the space of the ∗ section, service and maintenance work will become still easier if it vacates 7 7/8 in. or more.



(Length : in.)

- Where pipe between indoor and outdoor units is possible within the allowable limit.
  (Refer to the installation manual for the outdoor unit.)
- Install the indoor and outdoor units, power wire and connecting wires at least 3.5 ft. away from televisions or radios in order to prevent image interference or noise.
  (Depending on the radio waves, a distance of 3.5 ft. may not be sufficient enough to eliminate the noise.)

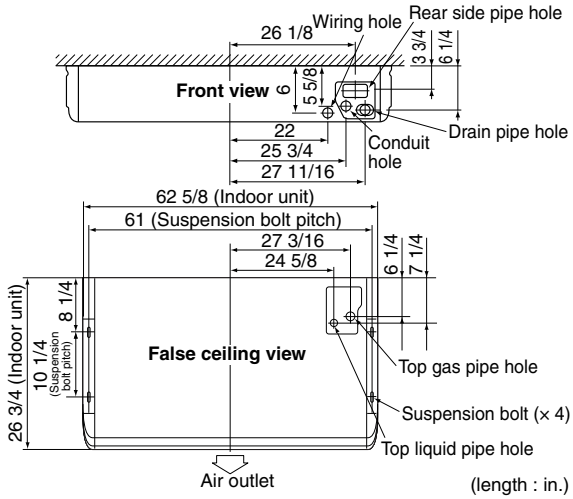
(2) Use suspension bolts for installation. Check whether the ceiling is strong enough to support the weight of the unit or not. If there is a risk, reinforce the ceiling before installing the unit.
(Installation pitch is marked on the paper pattern for installation. Refer to it to check for points requiring reinforcing.)

(3) This product may be installed on ceilings up to 10.6 ft. from the floor.

(4) A direction of installation.
- Refrigerant piping : the rear side, right side or upper part.
- Wiring : only the rear side.
- Drain piping : the rear right side or the right side.
  (As the rear left, installation is impossible.)

4. PREPARATIONS BEFORE INSTALLATION

(1) Relation of holes for indoor unit, suspension bolt position, piping and wiring.



(length : in.)

(2) Make holes for suspension bolts, refrigerant and drain pipe, and wire.
- Refer to the paper pattern for installation.
- Select the location for each of holes and open the holes in the ceiling.

(3) Remove the parts from the indoor unit.

(3-1) Detach the suction grille.
- Slide the locking knobs (×2) on the suction grille inward (direction of arrows) and lift upwards. **(Refer to Fig. 1)**
- With the suction grille open, remove the suction grille forward, holding on to the rear tabs (×2) on the suction grille. **(Refer to Fig. 2)**

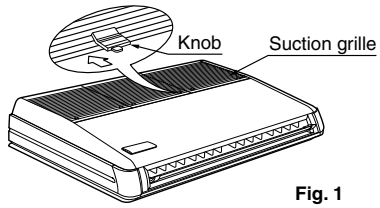


Fig. 1

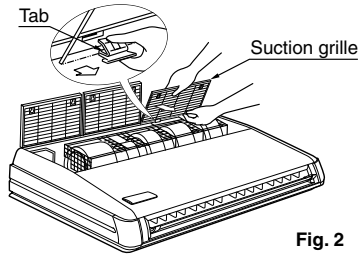


Fig. 2

(3-2) Remove the decoration panels (left and right) and the protection net.
- After removing the securing screws for the decoration panels (one each), pull them forward (in the direction of the arrow) and remove them. **(Refer to Fig. 3)**
- Remove the securing screws for the protection net. **(Refer to Fig. 3)**

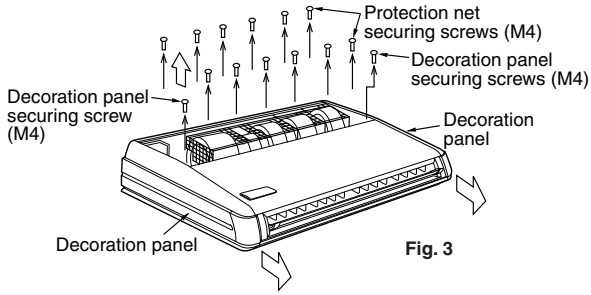


Fig. 3

- Raise one side of the protection net upwards (in the direction of the arrow (i)) and remove back (the arrow (ii)). **(Refer to Fig. 4, 5)**
- Take out the accessories.

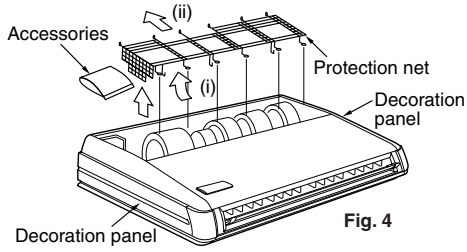


Fig. 4

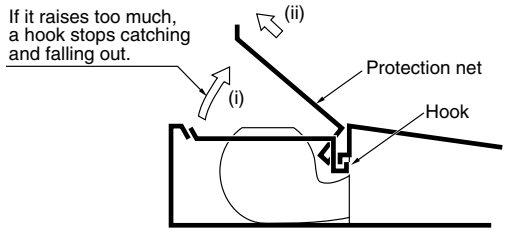


Fig. 5

(3-3) Remove the rear metal plate for transmission wire, remote controller wire and refrigerant pipe.

- It is necessary to drill the knock out hole in the removable part. Knock down several times with a punch and hammer and remove the removable part with pliers.
- When setting the refrigerant pipe to the rear side, remove the securing screws and the metal plate. **(Refer to Fig. 6).**

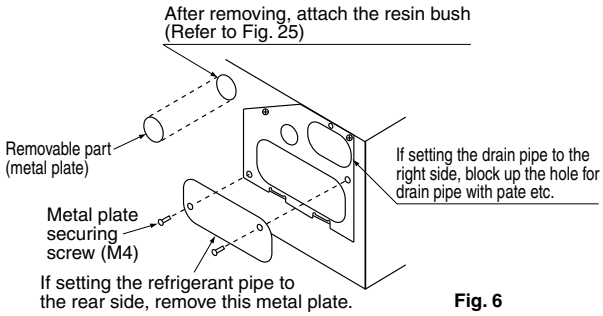

After removing, attach the resin bush
(Refer to Fig. 25)
Removable part
(metal plate)
If setting the drain pipe to the
right side, block up the hole for
drain pipe with pate etc.
Metal plate
securing
screw (M4)
If setting the refrigerant pipe to
the rear side, remove this metal plate.

Fig. 6

(3-4) Remove the hanger brackets.

- Loosen the 2 bolts (M8) used to attach the hanger brackets which are on each side (4 places left and right) to within 3/8 in.. **(Refer to Fig. 7, 8)**
- After removing the securing screws (M5) for the hanger brackets which are on the rear side, pull the hanger brackets back (in the direction of the arrow), and remove them. **(Refer to Fig. 8)**

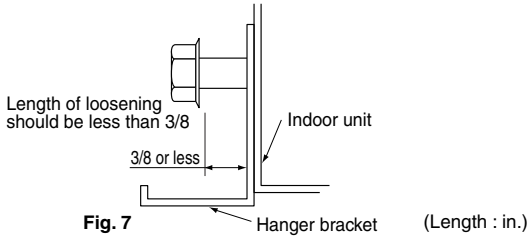


Fig. 7

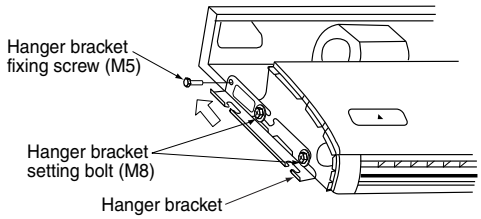


Fig. 8

(4) Attach the suspension bolts. (Use suspension bolts which are W3/8 or M8-M10 in size.)

- Adjust the distance of the suspension bolts from the ceiling in advance. **(Refer to Fig. 9)**

NOTE

- Use a hole-in anchor for existing ceilings, and a sunken insert, sunken anchor or other field supplied parts for new ceilings to reinforce the ceiling to bear the weight of the unit. Adjust clearance from the ceiling before proceeding further.

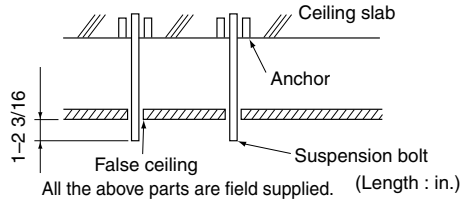


Fig. 9

5. INDOOR UNIT INSTALLATION

It may be easier to attach accessory parts before installing the indoor unit. Therefore, please also read the instruction manuals which are provided with the accessory parts.

As for the parts to be used for installation work, be sure to use the provided accessories and specified parts designated by our company.

(1) Secure the hanger brackets to the suspension bolts. (Refer to Fig. 10)

NOTE

- To ensure they are safely secured, use the included washers, and secure them with double nuts to make sure.

(2) Lift the indoor unit's main body, insert the bolts (M8) for the hanger brackets into the attachment part on the hanger brackets, while sliding the main body from the front. (Refer to Fig. 11)

(3) Fasten the bolts for the hanger brackets (M8) securely in 4 places, left and right. (Refer to Fig. 11)

(4) Replace the screws for the hanger brackets which had been removed (M5) securely in 2 places left and right. This is necessary to prevent any forward and back slide in the main body of the indoor unit. (Refer to Fig. 11)

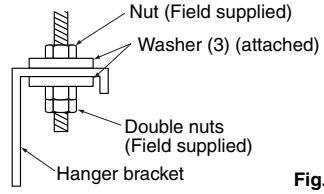


Fig. 10

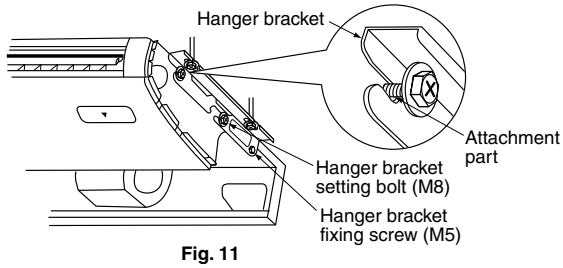


Fig. 11

(5) When hanging the indoor unit main body, be sure to use a level or a plastic tube with water in it to make sure the drain piping is set either level or slightly tilted, in order to ensure proper drainage. (Refer to Fig. 12)

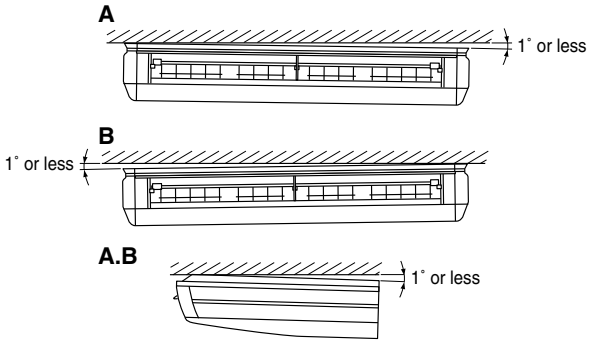


Fig. 12

A.When the drain piping is tilted to the right, or to the right and back.

Place it level, or tilt it slightly to the right or the back. (1° or less.)

B.When the drain piping is tilted to the left, or to the left and back.

Place it level, or tilt it slightly to the left or the back. (1° or less.)

CAUTION

- Setting the unit at an angle opposite to the drain piping might cause a water leakage.

6. REFRIGERANT PIPING WORK

DANGER

- Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan heater, stove or cooking device. Exposure to this gas could cause severe injury or death.

CAUTION

- **Use a pipe cutter and flare suitable for the type of refrigerant.**
- **To prevent dust, moisture or other foreign matter from infiltrating the tube, either pinch the end or cover it with tape.**
- **Do not allow anything other than the designated refrigerant to get mixed into the refrigerant circuit, such as air, etc. If any refrigerant gas leaks while working on the unit, ventilate the room thoroughly right away.**

6-1 GENERAL INSTRUCTIONS

- **For refrigerant pipe of outdoor units, see the installation manual attached to the outdoor unit.**
- **Execute thermal insulation work completely on both sides of the gas pipe and the liquid pipe or water or water leakage can result.**

  (Be sure to use insulation that is designed for use with HVAC Systems.)
- **Also, in cases where the temperature and humidity of the refrigerant pipe sections might exceed 86°F or RH 80%, reinforce the thermal insulation. (3/4 in. or thicker)**

  Condensate may form on the surface of the insulation pipe cover.
- **Before refrigerant pipe work, check which type of refrigerant is used.**

  Proper operation is not possible if the types of refrigerant are not the same.

6-2 CONNECTING THE REFRIGERANT PIPE

- The outdoor unit is charged with refrigerant.
- Use copper alloy seamless pipes.
- Be sure to use both a spanner and torque wrench together, as shown in the drawing, when connecting or disconnecting pipes to/from the unit. **(Refer to Fig. 13)**
- Refer to “Table 2” to determine the proper tightening torque.
- Refer to “Table 2” for the dimensions of flare shape.
- When connecting the flare nut, coat the flare section with ester oil or ether oil, rotate three or four times first, then screw in. **(Refer to Fig. 14)**

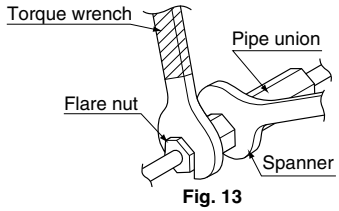


Fig. 13

CAUTION

- Be careful for oil not to adhere to any portions other than a flare part. If oil adhere to resin parts etc., there is a possibility of damaging by deterioration.

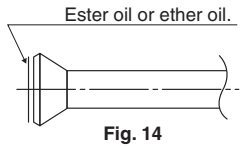
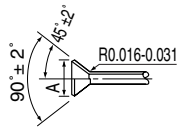


Fig. 14

NOTE

- Use the flare nut included with the unit main body.

Table 2

Pipe size (in.)	Tightening torque (ft. lbf)	Flare dimensions A (in.)	Flare shape (in.)
ϕ3/8	24.1-29.4	0.504-0.520	
ϕ5/8	45.6-55.6	0.760-0.776	

CAUTION

- Overtightening may damage the flare and cause a refrigerant leakage

Not recommended but in case of emergency

You must use a torque wrench, but if you are obliged to install the unit without a torque wrench, you may follow the installation method mentioned below.

When you keep on tightening the flare nut with a spanner, there is a point where the tightening torque suddenly increases. From that position, further tighten the flare nut the angle shown below :

Table 3

Pipe size (in.)	Further tightening angle	Recommended arm length of tool (in.)
ϕ3/8	60 to 90 degrees	Approx. 7 7/8
ϕ5/8	30 to 60 degrees	Approx. 11 13/16

After the work is finished, make sure to check that there is no gas leak.

6-3 BRAZING REFRIGERANT PIPING

DANGER

CAUTION TO BE TAKEN WHEN BRAZING REFRIGERANT PIPING

"Do not use flux when brazing refrigerant pipe. Therefore, use the phosphor copper brazing filler metal (BCuP) which does not require flux."
(Flux has an extremely negative effect on refrigerant piping systems. For instance, if chlorine based flux is used, it will cause pipe corrosion. If the flux contains fluorine, it will damage the refrigerant oil.)

- Before brazing local refrigerant pipe, nitrogen gas shall be blown through the pipe to expel air from the pipe.
  If you brazing is done without nitrogen gas blowing, a large amount of oxide film develops inside the pipe, and could cause system malfunction.
- When brazing the refrigerant pipe, only begin brazing after having carried out nitrogen substitution or while inserting nitrogen into the refrigerant pipe. Once this is done, connect the indoor unit with a flared or a flanged connection.
- Nitrogen should be set to 2.9 psi with a pressure-reducing valve if brazing while inserting nitrogen into the pipe. **(Refer to Fig. 15)**

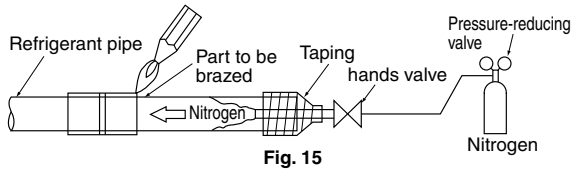


Fig. 15

DANGER

- Use of oxygen may cause an explosion resulting in serious injury or death. Only use nitrogen gas.

CAUTION

- Be sure to insulate any field piping all the way to the piping connection inside the unit. Any exposed piping may cause condensate or a burn if touched.

6-4 PIPING INSULATION

- Make absolutely sure to execute thermal insulation works on the pipe-connecting section after checking gas leakage by thoroughly studying the following figure and using the insulation pipe cover (6) and (7). (Fasten both ends with the clamps (4).) **(Refer to Fig. 16)**
- Wrap the small sealing pad (9) only around the insulation for the joints on the gas piping side. **(Refer to Fig. 16)**

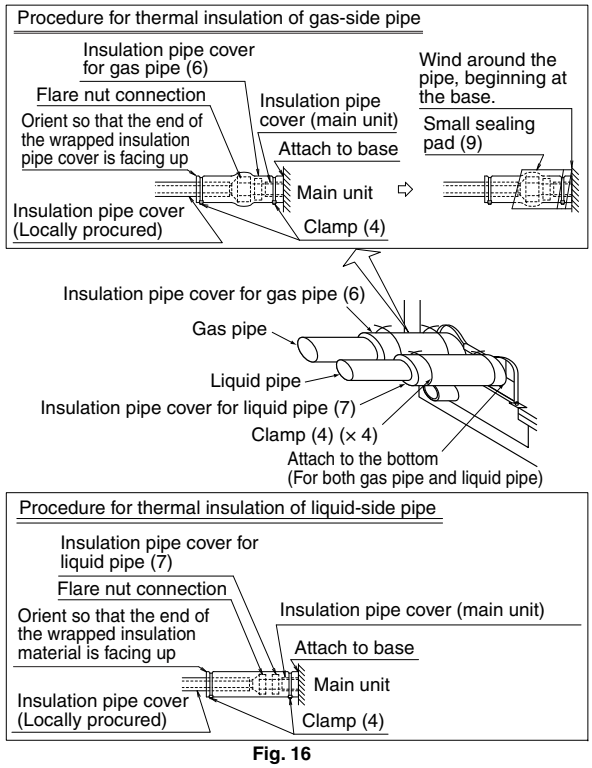

Procedure for thermal insulation of gas-side pipe
Insulation pipe cover for gas pipe (6)
Wind around the pipe, beginning at the base.
Flare nut connection
Insulation pipe cover (main unit)
Orient so that the end of the wrapped insulation pipe cover is facing up
Attach to base
Small sealing pad (9)
Main unit
Insulation pipe cover (Locally procured)
Clamp (4)
Insulation pipe cover for gas pipe (6)
Gas pipe
Liquid pipe
Insulation pipe cover for liquid pipe (7)
Clamp (4) (× 4)
Attach to the bottom
(For both gas pipe and liquid pipe)
Procedure for thermal insulation of liquid-side pipe
Insulation pipe cover for liquid pipe (7)
Flare nut connection
Insulation pipe cover (main unit)
Orient so that the end of the wrapped insulation material is facing up
Attach to base
Main unit
Insulation pipe cover (Locally procured)
Clamp (4)

Fig. 16

(1) For piping facing back.
Remove the rear metal plate for pipe. **(Refer to Fig. 17)**
- The figure of the direction of back shows when both the piping and drain pipe are set backward.
  When setting the piping to face up or right, attach the rear metal plate for refrigerant pipe and plug a hole for drain pipe. (See "4 PREPARATIONS BEFORE INSTALLATION" (3-3) on page 6)

(2) For piping facing up.
- When setting the piping to face up, the L-shaped branch pipe kit sold separately is required.
- Removing the top penetration lid and use the L-shaped branch pipe kit sold separately to set the pipe. **(Refer to Fig. 18, 19)**

(3) For piping facing right.
- Cut out a slit hole on the decoration panel (right) and set the pipe. **(Refer to Fig. 17)**

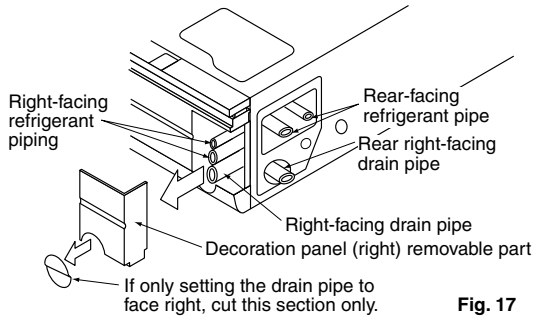

Right-facing refrigerant piping
Rear-facing refrigerant pipe
Rear right-facing drain pipe
Right-facing drain pipe
Decoration panel (right) removable part
If only setting the drain pipe to face right, cut this section only.

Fig. 17

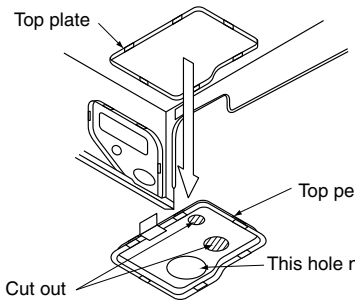


Fig. 18 (A figure from an inside bottom)

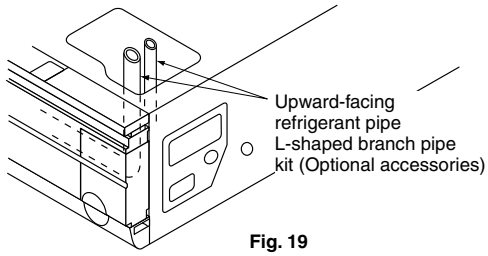


Fig. 19

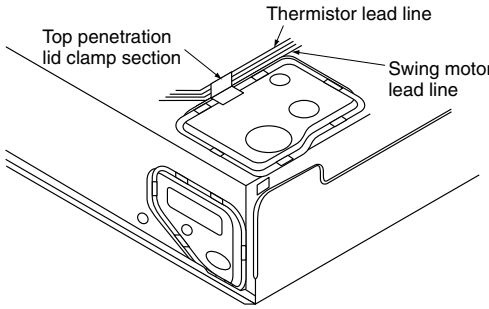


Fig. 20 (A figure from an inside bottom)

- When piping is complete, cut the removed penetration lid into the shape of the pipe using scissors and attach.
  As when before removing the top penetration lid, secure the lead lines for the swing motor and thermistor by passing them through the clamp section on the top penetration lid.
  (Refer to Fig. 18, 20)
- When doing this, block any gaps between the pipe penetration lid and the pipes using putty to prevent dust from entering the indoor unit.

7. DRAIN PIPING WORK

(1) Carry out the drain piping.

- Make sure piping provides proper drainage.
- You can select whether to bring the drain piping out from the rear right or right. For rear right-facing and right-facing situations, refer to "6. REFRIGERANT PIPING WORK" on page 7.
- Make sure the pipe diameter is the same or bigger than the branch piping. (vinyl-chloride piping, nominal diameter 1 in., external diameter 1 1/4 in.)
- Make sure the piping is short, has at least a 1/100 slope, and can prevent air pockets from forming. **(Refer to Fig. 21)**
- Do not allow any slack to gather in the drain pipe inside the indoor unit.
  (Slack in the drain pipe can cause the suction grille to break.)

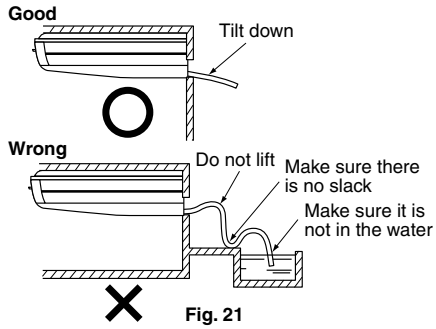


Fig. 21

CAUTION

- Water accumulating in the drain piping can cause the drain to clog.

- Be sure to use the drain pipe (1) and metal clamp (2).
  Also, insert the drain pipe completely into the drain socket, and securely attach the metal clamp bracket inside the gray tape area on the inserted tip of the drain pipe. **(Refer to Fig. 22)**
  Screw the screws on the metal clamp bracket until there is 5/32 in. left. (Pay attention to the direction of the attachment to prevent the metal clamp bracket from coming into contact with the suction grille.) **(Refer to Fig. 23)**

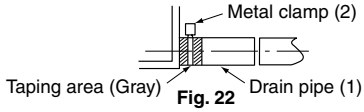


Fig. 22

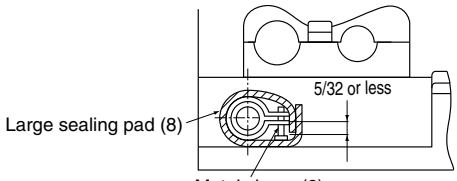


Fig. 23 (Length : in.)

- Insulate the metal clamp bracket and drain pipe from the bottom using the large sealing pad (8). **(Refer to Fig. 23)**
- Be sure to insulate all drain piping running indoors.

(2) Check to make sure the water flows smoothly after piping is complete.

- Slowly pour 600 ml of drain-checking water into the drain pan through the air outlet.

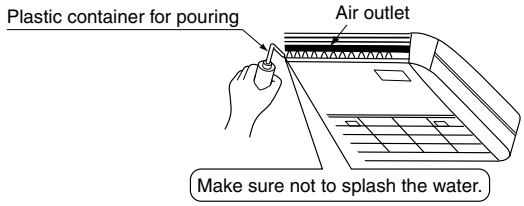


Fig. 24

CAUTION

- Drain piping connections :
  Do not connect the drain piping directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipes and corrode the heat exchanger.

- Keep in mind that it will become the cause of getting drain pipe blocked if water collects on drain pipe.

8. ELECTRIC WIRING WORK

8-1 GENERAL INSTRUCTIONS

- All field supplied parts and materials and electric works must conform to local codes.
- Use copper wire only.
- For electric wiring work, refer to also "Wiring diagram label" attached to the control box lid.
- For remote controller wiring details, refer to the installation manual attached to the remote controller.
- All wires must be performed by an authorized electrician.
- An earth leakage circuit breaker capable of shutting down power supply to the entire system must be installed.
- Refer to the installation manual attached to the outdoor unit for the size of power supply wiring connected to the outdoor unit, the capacity of the circuit breaker and switch, and wiring instructions.
- Be sure to ground the air conditioner.

DANGER

- Do not ground units to water pipes, telephone wires or lightning rods because incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.

8-2 ELECTRICAL CHARACTERISTICS

Units				Power supply		Fan motor	
Model	Hz	Volts	Voltage range	MCA	MFA	W	FLA
FHQ18PVJU	60	208-230V	Max. 253V Min. 187V	1.3	15	130	1.0
FHQ24PVJU				1.3	15	130	1.0
FHQ30PVJU				1.3	15	130	1.0

MCA : Min. Circuit Amps (A); MFA : Max. Fuse Amps (A)
W: Fan Motor Rated Output (W); FLA : Full Load Amps (A)

8-3 SPECIFICATIONS FOR FIELD SUPPLIED FUSES AND WIRES

Model	Power supply wiring		Remote controller wiring Transmission wiring	
	Field fuses	Size	Wire	Size
FHQ18PVJU	15A	Wire size must comply with local codes.	Sheathed wire (2 wires)	AWG 18-16
FHQ24PVJU				
FHQ30PVJU				

Allowable length of transmission wire between indoor/outdoor units and between the indoor unit and the remote controller wire are as follows.

(1) Outdoor unit - Indoor unit : Max. 3280 ft.

(2) Indoor unit - Remote controller : Max. 1640 ft.

9. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER

9-1 HOW TO CONNECT WIRES

CAUTION

- Even if the control box lid is removed, pull the remote controller wire, transmission wire and the power supply wire inside the unit using conduits for each, so that the wires do not come into contact with the opening section of the metal casing.
- Pass conduits through the wall and secure along with the refrigerant pipe in order to prevent external pressure being applied to transmission wire and power supply wire.
- To avoid short circuits in the electric parts box, be sure to apply the sealing material or putty (not included) to the wiring hole to prevent the infiltration of water, insects or other small creatures.
- Arrange the wires and fix a lid firmly so that the lid does not float during wiring work.
- Do not clamp remote controller wire and transmission wire together with power supply wire. Doing so may cause malfunction.
- Remote controller wire, transmission wire and power supply wire should be located at least 5 in. from other electric wires. Not following this guideline may result in malfunction due to electrical noise.

<Method of wiring power supply, units and connecting remote controller wiring> (Refer to Fig. 26)

- Attaching the resin bush
  Attach the resin bush (10) for remote controller wiring.
- Installation of conduit
  Insert the conduit for power supply wire in the conduit hole, and fix it with the lock nut.

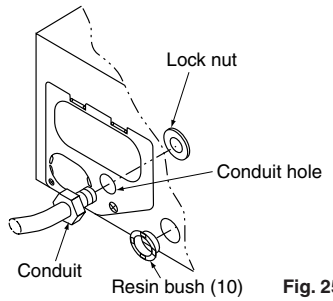
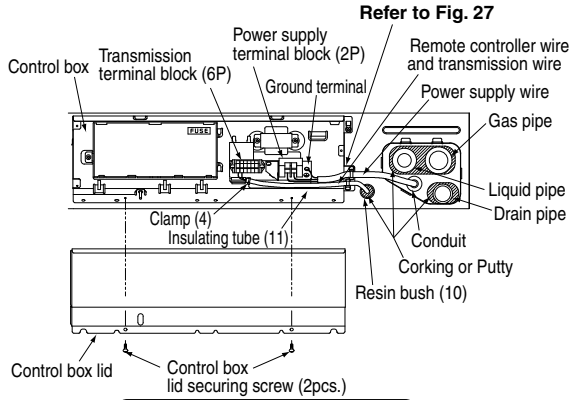


Fig. 25

- **Power supply wire**
  Holding the control box lid, loosen the 2 securing screws, remove the control box lid, match up the phases on the power supply terminal block inside (2P), and make the connections. After this is done, use the attached clamp (4) to bind wire between units to the anchor point. **(Refer to Fig. 27)**
- **Remote controller wire and transmission wire**
  Holding the control box lid, loosen the 2 securing screws, remove the control box lid.
  Thread the remote controller wire and transmission wire through the insulating tube (11) and secure with the clamp (4), and cut off the insulating tube (11) to suitable length. Pull the wires inside through resin bush and connect the wires to the transmission terminal block (6P) inside the control box. After connecting, use the clamp (4) to bind the remote controller wire together with the transmission wire to the anchor. **(Refer to Fig. 26, 27, 28)**



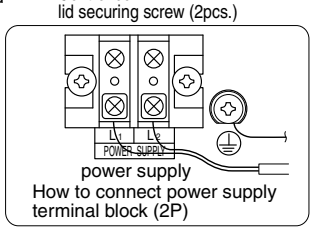


Fig. 26

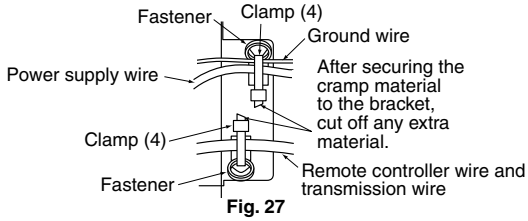


Fig. 27

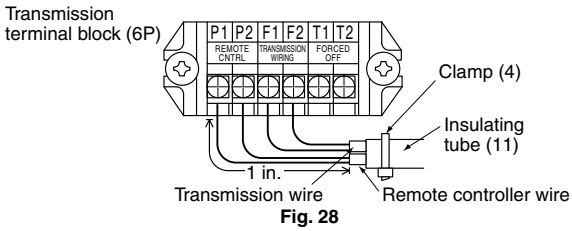


Fig. 28

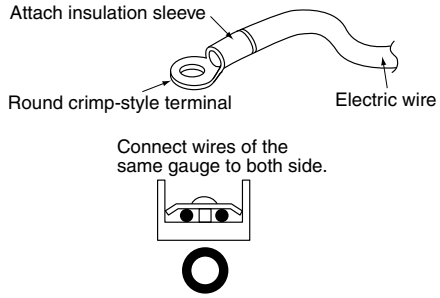
- In the insulating tube (11), it can let the remote controller wire and transmission wire pass to 2.

WARNING

- Never connect power supply wiring to the terminal block for remote controller wiring as this could damage the entire system.
- Use only specified wire and connect wires to the terminal tightly. Be careful wires do not place external stress on terminals. Keep wires in neat order so as to not obstruct other equipment. Make sure that the electric box lid fits tightly. Incomplete connections could result in overheating and, in worse case, result in electric shock or fire.

NOTE

1. Use round crimp-style terminals for connecting wires to the power supply terminal block.
   If unavailable, observe the following points when wiring.
   - Do not connect wires of different gauge to the same power supply terminal.
     (Looseness in the connection may cause overheating.)
   - Use the specified electric wire. Connect the wire securely to the terminal. Lock the wire down without applying excessive force to the terminal. (Tightening torque: 0.97 ft lbf ±10%)



2. Tightening torque for the terminal screws.
   - Use the correct screwdriver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
   - If the terminal screws are tightened too hard, screws might be damaged.
   - Refer to the table below for the tightening torque of the terminal screws.

Table 4

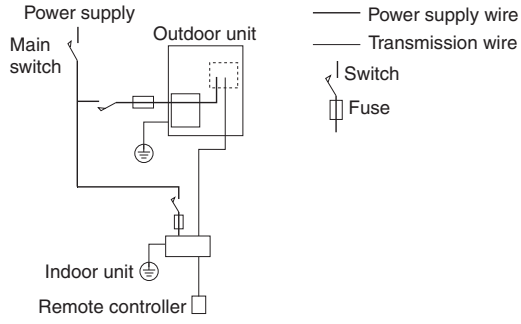
Terminal	Size	Tightening torque (ft-lbf)
Transmission terminal block (6P)	M3.5	0.58 – 0.72
Power supply terminal block (2P)	M4	0.87 – 1.06
Ground terminal	M4	0.87 – 1.06

3. Do not connect wires of different gauge to the same ground terminal. Looseness in the connection may deteriorate protection.
4. Outside of the unit, keep transmission wire at least 5 in. away from power supply wire. The equipment may malfunction if subjected to electrical (external) noise.
5. For remote controller wire, refer to the “INSTALLATION MANUAL OF REMOTE CONTROLLER” attached to the remote controller.

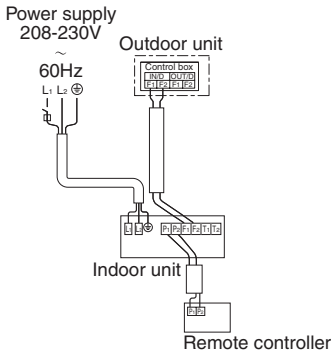
9-2 WIRING EXAMPLE

- Fit the power supply wire of each unit with a switch and fuse as shown in the drawing.

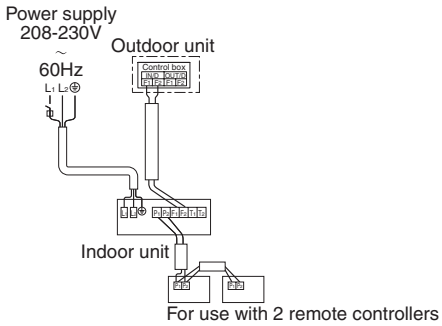
COMPLETE SYSTEM EXAMPLE



1. When using 1 remote controller for 1 indoor unit. (Normal operation)



2. When using 2 remote controllers for 1 indoor unit.



NOTE

1. All transmission wires except for remote controller wire are polarized and must match the terminal symbol.
2. A single switch can be used to supply power to units on the same system. However, branch switches and branch circuit breakers must be selected carefully.
3. Do not ground the equipment on gas pipes, water pipes or lightning rods, or crossground with telephones. Improper grounding could result in electric shock.

10. ATTACHING THE SUCTION GRILLE, THE DECORATION PANELS AND THE PROTECTION NET

Once wiring is complete, firmly attach the control box lid, the suction grille, the decoration panels and the protection net in the order opposite to detachment.

- Attaching the protection net
  Attach the protection net from the way of the hook (i), fix 2 securing screws of the middle of the other side first (ii), then fix the remaining securing screws (iii).

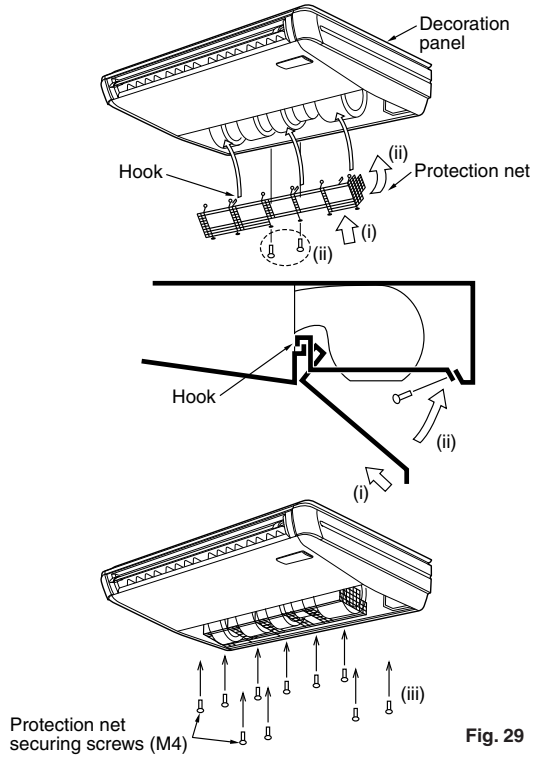


Fig. 29

11. FIELD SETTING

Make sure the control box lids are closed on the indoor and outdoor units, and turn on the power.
Field setting must be made from the remote controller in accordance with the installation manual.

- Setting can be made by changing the “Mode No.”, “FIRST CODE NO.”, and “SECOND CODE NO.”.
- For setting and operation, refer to the “FIELD SETTING” in the installation manual of the remote controller.

11-1 Setting air filter sign

- Remote controllers are equipped with liquid crystal display air filer signs to display the time to clean air filters.
- Change the SECOND CODE NO. according to “Table 5” depending on the amount of dirt or dust in the room. (SECOND CODE NO. is factory set to “01” for air filter contamination-light.)

Table 5

Setting	Spacing time of display air filter sign (long life type)	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Air filter contamination-light	Approx. 2500 hrs	10 (20)	0	01
Air filter contamination-heavy	Approx. 1250 hrs			02

<When using wireless remote controllers>

- When using wireless remote controllers, wireless remote controller address setting is necessary. Refer to the installation manual attached to the wireless remote controller for setting instructions.

11-2 2 remote controllers control (Controlling 1 indoor unit by 2 remote controllers)

- When using 2 remote controllers, one must be set to "MAIN" and the other to "SUB".

MAIN/SUB CHANGEOVER

(1) Insert a ⊖ screw driver into the recess between the upper and lower part of remote controller and, working from the 2 positions, pry off the upper part.
The remote controller PC board is attached to the upper part of remote controller. **(Refer to Fig. 30)**

(2) Turn the MAIN/SUB changeover switch on one of the 2 remote controllers PC boards to "S". (Leave the switch of the other remote controllers set to "M".) **(Refer to Fig. 31)**

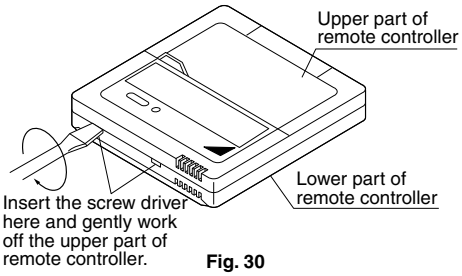

Upper part of remote controller
Lower part of remote controller
Insert the screw driver here and gently work off the upper part of remote controller.

Fig. 30

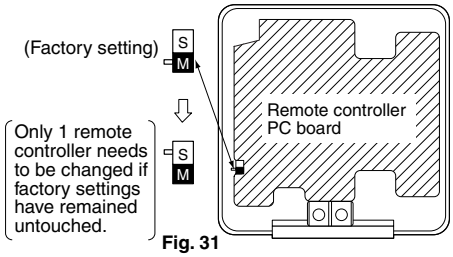


Fig. 31

Wiring Method

(See "8. ELECTRIC WIRING WORK" and "9. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER" on page from 10 to 12.)

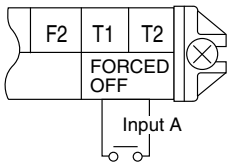
(3) Remove the control box lid.

(4) Add 2nd remote controller to the transmission terminal block (P1, P2) in the control box. (There is no polarity.) (Refer to Fig. 28 on page 11 and Table 4 on page 11)

11-3 COMPUTERISED CONTROL (FORCED OFF AND ON/OFF OPERATION)

See "FIELD SETTING" on page 12 for local settings.

(1) Wire specifications and how to perform wiring
Connect the input from outside to terminals T1 and T2 of the transmission terminal block.



Wire specification	Sheathed vinyl wire or cable (2 wires)
Gauge	AWG 18-16
Length	Max. 328 ft.
External terminal	Contact that can ensure the minimum applicable load of 15 V DC, 10 mA.

(2) Actuation
- The following table explains FORCED OFF and ON/OFF OPERATIONS in response to Input A.

FORCED OFF	ON/OFF OPERATION
Input "ON" stops operation (impossible by remote controllers.)	Input OFF → ON turns ON unit.
Input OFF enables control by remote controller.	Input ON → OFF turns OFF unit.

(3) How to select FORCED OFF and ON/OFF OPERATION
- Turn the power on and then use the remote controller to select operation.

11-4 CENTRALIZED CONTROL

- For centralized control, it is necessary to designate the group No. For details, refer to the manual of each optional controllers for centralized control.

12. TEST OPERATION

Refer to the section of "FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED." on page 4.

- Make sure if the service lids are closed on the indoor and outdoor units.
- After finishing the construction of refrigerant pipe, drain pipe and electric wire, conduct the check operation referring to the installation manual of the outdoor unit.
- The operation lamp of the remote controller will flash when a malfunction occurs. Check the malfunction code on the liquid crystal display to identify the point of trouble. An explanation of malfunction codes and the corresponding trouble is provided in the installation manual of the outdoor unit.
It any of the items in Table 6 are displayed, there may be a problem with the wiring or power, so check the wiring again.

Table 6

Remote control display	Content
" [ ] " (under centralized control) is lit up	• There is a short circuit at the FORCED OFF terminals (T1, T2)
"U4" is lit up "UF" is lit up	• The power on the outdoor unit is off. • The outdoor unit has not been wired for power supply. • Incorrect wiring for the transmission wiring and / or FORCED OFF wiring. • The transmission wiring is cut.
No display	• The power on the indoor unit is off. • The indoor unit has not been wired for power supply. • Incorrect wiring for the remote controller wiring, the transmission wiring and / or the FORCED OFF wiring. • The remote controller wiring is cut.

- If "U3" is lit up, the malfunction code shows the check operation has not been performed yet.

12-1 HOW TO DIAGNOSE FOR MALFUNCTION

With the power on, it is possible to monitor the type of malfunction by looking at the malfunction code displayed in the remote controller.

If nothing is displayed in the remote controller, check the following items before attempting a diagnosis based on the malfunction code, as they might be a cause.

- Disconnected or incorrect wiring (between power supply and the outdoor unit, between the outdoor and indoor units, and between the indoor unit and the remote controller)
- Burnt out indoor or outdoor unit fuse
- " 88 " will be displayed for a few seconds on the remote controller immediately after the power is turned on.
  This display indicates that the remote controller is being checked to see whether it is ok or not, and does not indicate a malfunction.

Diagnose with the display on the liquid crystal display remote controller.

1. With the wired remote controller. (NOTE 1)
   When the operation stops due to trouble, operation lamp flashed, and " " and the malfunction code are indicated in the liquid crystal display. In such a case, diagnose the fault contents by referring to the table on the malfunction code list it case of group control, the unit No. is displayed so that the indoor unit No. with the trouble can be recognized. (NOTE 2).
2. With the wireless remote controller.
   (Refer also to the operation manual attached to the wireless remote controller)
   When the operation stops due to trouble. the display on the indoor unit flashes. In such a case, diagnose the fault contents with the table on the malfunction code list looking for the malfunction code which can be found by following procedures. (NOTE 2)
   (1) Press the INSPECTION /TEST OPERATION button, " " is displayed and " 0 " flashes.
   (2) Press the PROGRAMMING TIME button and find the unit No. which stopped due to trouble.
   Number of beeps
   3 short beeps Perform all the following operations
   1 short beep Perform (3) and (6)
   1 long beep No trouble
   (3) Press the OPERATION MODE SELECTOR button and upper figure of the malfunction code flashes.
   (4) Continue pressing the PROGRAMMING TIME button unit it makes 2 short beeps and find the upper code.
   (5) Press the OPERATION MODE SELECTOR button and lower figure of the malfunction code flashes.
   (6) Continue pressing the PROGRAMMING TIME button unit it makes a long beep and find the lower code.
   - A long beep indicate the malfunction code.

NOTE

1. In case wired remote controller. Press the INSPECTION / TEST OPERATION button on remote controller, " " starts flashing.
2. Keep down the ON/OFF button for 5 seconds or longer in the inspection mode and the above trouble history disappears, after the trouble code goes on and off twice, followed by the code " 00 "(normal).
   The display changes from the inspection mode to the normal mode.

Order	Operation
(1)	Open gas side stop valve.
(2)	Open liquid side stop valve.
(3)	Electrify crank case heater for 6 hours.
(4)	Set to cooling with the remote controller and push " ON/OFF " button to start operation.
(5)	Push" /TEST "button twice and operate in TEST OPERATION MODE for 3 minutes.
(6)	Push" SWING "button and confirm its operation.
(7)	Push" /TEST "button and operate normally.
(8)	Confirm its function according to the operation manual.

12-2 MALFUNCTION CODE

- For places where the malfunction code is left blank, the " " indication is not displayed. Though the system continues operating, be sure to inspect the system and make repairs as necessary.
- Depending on the type of indoor or outdoor unit, the malfunction code may or may not be displayed.

Code	Malfunction/Remarks
A1	Indoor unit's PC board faulty
A3	Condensate level abnormal
A6	Indoor fan motor overloaded, overcurrent or locked.
A7	Air flow direction adjust motor is fault.
A9	Drive for electronic expansion valve is fault.
AJ	Type set improper
	Capacity data is wrongly preset. Or there is nothing programmed in the data hold IC.
C4	Sensor R2T for heat exchanger temperature is fault.
C5	Sensor R3T for heat exchanger temperature is fault.
C9	Sensor R1T for suction air temperature is fault.
CJ	Sensor for remote controller is fault.
	The remote controller thermistor does not function, but the system thermo run is possible.
E3	High pressure abnormal (outdoor unit)
E4	Low pressure abnormal (outdoor unit)
E5	Compressor motor lock malfunction
E7	Outdoor fan motor lock malfunction Outdoor fan instantaneous overcurrent malfunction
E9	Electronic expansion valve faulty (outdoor unit)
F3	Discharge pipe temperature abnormal (outdoor unit)
F6	The refrigerant is overcharged.
H9	Outdoor air thermistor faulty (outdoor unit)
J3	Discharge pipe thermistor faulty (outdoor unit)
J5	Suction pipe thermistor faulty (outdoor unit)
J6	Heat exchanger thermistor faulty (outdoor unit)
J9	Sensor for heat exchanger is fault.
JA	Sensor for high pressure is fault.
JC	Sensor for low pressure is fault.
L4	Overheated heat-radiating fin (outdoor)
	Inverter cooling defect.

L5	Instantaneous overcurrent (outdoor)
	Possible earth fault or short circuit in the compressor motor.
L8	Electric thermal (outdoor)
	Possible electrical overload in the compressor or cut line in the compressor motor.
L9	Stall prevention (outdoor)
	Compressor possibly locked.
LC	Transmission malfunction between the outdoor control units' inverters (outdoor)
P1	Open-phase (outdoor)
P3	PC board temperature sensor malfunction (outdoor)
P4	Heat-radiating fin temperature sensor malfunction (outdoor)
PJ	Type set improper (outdoor unit)
	Capacity data is wrongly preset. Or there is nothing programmed in the data hold IC.
U0	Suction pipe temperature abnormal
U2	Power source voltage malfunction
	Includes the defect in K1M.
U3	The check operation has not performed.
U4 UF	Transmission error (indoor unit - outdoor unit)
	Miswiring between indoor and outdoor units or malfunction of the PC board mounted on the indoor and the outdoor units. If UF is shown, the wire between the indoor and outdoor units is not properly wired. Therefore, immediately disconnect the power supply and correct the wire. (The compressor and the fan mounted on the outdoor unit may start operation independent of the remote controller operation.) The power is not supplied to outdoor unit.
U9	Same transmission for in / outdoor unit is fault.
UA	Miss setting for multi system
	Setting is wrong for selector switch of multi-system. (see switch SS2 on the main unit's PC board)

14.4 FHQ36MVJU / FHQ42MVJU

DAIKIN

SPLIT SYSTEM Air Conditioners Installation manual

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1. SAFETY CONSIDERATIONS

Please read these “SAFETY CONSIDERATIONS” carefully before installing air conditioning equipment and be sure to install it correctly. After completing the installation, make sure that the unit operates properly during the start-up operation. Please instruct the customer on how to operate the unit and keep it maintained.
Also, inform customers that they should store this installation manual along with the operation manual for future reference. This air conditioner comes under the term “appliances not accessible to the general public”.

Meaning of danger, warning, caution and note symbols.

⚠ **DANGER** .....Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING** .....Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION** .....Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be sued to alert against unsafe practices.

⚠ **NOTE** .....Indicates situation that may result in equipment or property-damage-only accidents.

⚠ DANGER

- **Do not ground units to water pipes, telephone wires or lightning rods because incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.**
- **Do not install unit in an area where flammable materials are present due to risk of explosion resulting in serious injury or death.**
- **Refrigerant gas is heavier than air and displaces oxygen. A massive leak could lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.**
- **If the refrigerant gas leaks during installation, ventilate the area immediately.**
  Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could result in severe injury or death.
- **After completing the installation work, check that the refrigerant gas does not leak.**
  Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could result in severe injury or death.
- **Safely dispose of the packing materials.**
  Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries. Tear apart and throw away plastic packaging bags so that children will not play with them. Children playing with plastic bags face the danger of death by suffocation.

⚠ WARNING

- **Ask your dealer or qualified personnel to carry out installation work. Do not try to install the air conditioner by yourself.**
  Improper installation may result in water leakage, electric shocks or fire.
- **Perform installation work in accordance with this installation manual.**
  Improper installation may result in water leakage, electric shocks or fire.
- **Be sure to use only the specified accessories and parts for installation work.**
  Failure to use the specified parts may result in water leakage, electric shocks, fire or the unit falling.
- **Install the air conditioner on a foundation strong enough to withstand the weight of the unit.**
  A foundation of insufficient strength may result in the equipment falling and causing injuries.
- **Carry out the specified installation work after considering strong winds, typhoons or earthquakes.**
  Improper installation work may result in the equipment falling and causing accidents.
- **Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual.**
  An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.
- **Make sure that all wiring is secured, the specified wires are used, and no external forces act on the terminal connections or wires.**
  Improper connections or installation may result in fire.
- **When wiring the power supply and connecting the remote controller wire and transmission wire, position the wires so that the control box lid can be securely fastened.**
  Improper positioning of the control box lid may result in electric shocks, fire or the terminals overheating.

- **Before touching electrical parts, turn off the unit.**
- **Do not touch the switch with wet fingers.**
  Touching a switch with wet fingers can cause electric shock.
- **Be sure to install an earth leakage breaker.**
  Failure to install an earth leakage breaker may result in electric shocks, or fire.
- **Do not install the air conditioner in the following locations :**
  (a) where a mineral oil mist or an oil spray or vapor is produced, for example in a kitchen.
  Plastic parts may deteriorate and fall off or result in water leakage.
  (b) where corrosive gas, such as sulfurous acid gas, is produced.
  Corroding copper pipes or soldered parts may result in refrigerant leakage.
  (c) near machinery emitting electromagnetic waves.
  Electromagnetic waves may disturb the operation of the control system and result in a malfunction of the equipment.
- **Refrigerant pipes may be very hot or very cold during or immediately after operation.**
  Touching them could result in burns or frostbite. To avoid injury give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.

⚠ CAUTION

- **Install drain pipe in order to ensure proper drainage and do the thermal insulation of the pipe in order to prevent condensate.**
  Improper drain pipe may result in water leakage and property damage.
- **Be very careful about product transportation.**
  Some products use PP bands for packaging. Do not use any PP bands for a means of transportation. It is dangerous.
- **Safely dispose of the packing materials.**
  Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries.
  Tear apart and throw away plastic packaging bags so that children will not play with them. If children play with a plastic bag which was not torn apart, they face the risk of suffocation.
- **Do not turn off the power immediately after stopping operation.**
  Always wait at least 5 minutes before turning off the power. Otherwise, water leakage and trouble may occur.
- **Make sure to provide for adequate measures in order to prevent that the outdoor unit be used as a shelter by small animals.**
  Small animals making contact with electrical parts can cause malfunctions, smoke or fire. Please instruct the customer to keep the area around the unit clean.

⚠ NOTE

- **Install the indoor and outdoor units, power supply wire and transmission wire at least 3.5 ft. away from televisions or radios in order to prevent image interference or noise.**
  (Depending on the radio waves, a distance of 3.5 ft. may not be sufficient enough to eliminate the noise.)
- **Remote controller (wireless kit) transmitting distance can result shorter than expected in rooms with electronic fluorescent lamps. (inverter or rapid start types)**
  Install the indoor unit as far away from fluorescent lamps as possible.
- **In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.**
- **Dismantling of the unit, treatment of the refrigerant, oil and eventual other parts, should be done in accordance with the relevant local and national regulations.**

2. BEFORE INSTALLATION

- **When moving the unit while removing it from the packing case, be sure to lift it by the four hanger brackets. Avoid putting any pressure on other parts especially the refrigerant piping.**
- Be sure to check the type of refrigerant to be used before installing the unit. (Using an incorrect refrigerant will prevent normal operation of the unit.)
- The accessories needed for installation must be retained in your custody until the installation work is completed. Do not discard them!
- Decide upon a line of transport.
- Leave the unit inside its packaging while moving, until reaching the installation site. Where unpacking is unavoidable, use a sling of soft material or protective plates together with a rope when lifting, to avoid damage or scratches to the unit.
- When selecting installation site, refer to the paper pattern.
- For the installation of an outdoor unit, refer to the installation manual attached to the outdoor unit.
- Do not install or operate the unit in rooms mentioned below.
  - **Laden with mineral oil, or filled with oil vapor or spray like in kitchens. (Plastic parts may deteriorate which could eventually cause the unit to fall out of place, or could lead to leaks.)**
  - **Where corrosive gas like sulfurous gas exists. (Copper tubing and brazed spots may corrode which could eventually lead to refrigerant leaks.)**
  - **Where machines can generate electromagnetic waves. (Control system may malfunction.)**
  - **Where the air contains high levels of salt such as that near the ocean and where voltage fluctuates greatly such as that in factories. Also in vehicles or vessels.**
- This unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment.
  If installed as a household appliance it could cause electromagnetic interference.

⚠ WARNING

- Entrust installation to the place of purchase or a qualified person. Improper installation could lead to leak and, in worse cases, electric shock of fire.
- Use of unspecified parts could lead to the unit falling, leaks and, in worse cases, electric shock or fire.

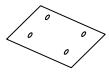
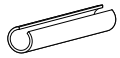
⚠ NOTE

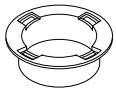
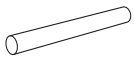
- Be sure to read this manual before installing the indoor unit.
- Be sure to mount an air filter (part to be procured in the field) in the suction air passage in order to prevent water leaking, etc.

2-1 ACCESSORIES

Check the following accessories are included with your unit.

Name	(1) Drain pipe	(2) Metal clamp	(3) Washer for hanger bracket	(4) Clamp
Quantity	1 pc.	1 pc.	8 pcs.	9 pcs.
Shape				

Name	(5) Paper pattern for installation	Insulation pipe cover	Sealing pad
Quantity	1 pc.	1 each	1 each
Shape		(6) For gas pipe  (7) For liquid pipe	(8) Large (9) Small

Name	(10) Resin bush	(11) Insulating tube	
Quantity	1 pc.	3 pcs.	(Other) • Operation manual • Installation manual
Shape		For wire 	

2-2 OPTIONAL ACCESSORIES

- The remote controller are required for this indoor unit in Table 1.
- These are 2 types of remote controllers : wired and wireless. Select a remote controller according to customer request and install in an appropriate place.

Table 1

Remote controller	
Wired type	BRC1C71
Wireless type	BRC7E83

NOTE

- If you wish to use a remote controller that is not listed in “Table 1” on page 4, select a suitable remote controller after consulting catalogs and technical materials.

FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED.

a. Items to be checked after completion of work

Items to be checked	If not properly done, what is likely to occur	Check
Are the indoor and outdoor unit fixed firmly?	The units may drop, vibrate or make noise.	
Is the gas leak test finished?	It may result in insufficient cooling.	
Is the unit fully insulated?	Condensate water may drip.	
Does drainage flow smoothly?	Condensate water may drip.	
Does the power supply voltage correspond to that shown on the name plate?	The unit may malfunction or the components burn out.	
Are wiring and piping correct?	The unit may malfunction or the components burn out.	
Is the unit safely grounded?	It may result in electric shock.	
Is wiring size according to specifications?	The unit may malfunction or the components burn out.	
Is something blocking the air outlet or inlet of either the indoor or outdoor units?	It may result in insufficient cooling.	
Are refrigerant piping length and additional refrigerant charge noted down?	The refrigerant charge in the system is not clear.	

b. Items to be checked at time of delivery

∗ Also review the “SAFETY CONSIDERATIONS”

Items to be checked	Check
Did you explain about operations while showing the operation manual to your customer?	
Did you hand the instruction manual over to your customer?	

2-3 NOTE TO THE INSTALLER

Be sure to instruct customers how to properly operate the unit (especially cleaning filters, operating different functions, and adjusting the temperature) by having them carry out operations themselves while looking at the manual.

3. SELECTING INSTALLATION SITE

Please attach additional insulation pipe cover to the unit body when it is believed that the relative humidity in the ceiling exceeds 80%. Use glass wool, polyethylene foam, or similar with a thickness of 3/8 in.. or more as insulation pipe cover.

(1) Select an installation site where the following conditions are fulfilled and that meets your customer’s approval.

- Where optimum air distribution can be ensured.
- Where nothing blocks air passage.
- Where condensate can be properly drained.
- Where the ceiling is strong enough to bear the indoor unit weight.
- Where the false ceiling is not noticeably on an incline.
- Where sufficient clearance for maintenance and service can be ensured.

DANGER

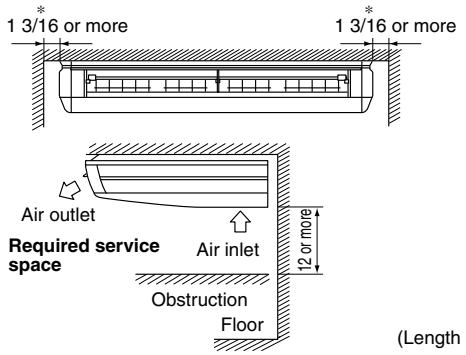
- Do not install unit in an area where flammable materials are present due to the risk explosion resulting in serious injury or death.

WARNING

- If the supporting structural members are not strong enough to take the unit's weight, the unit could fall out of place and cause serious injury.

NOTE

- When a margin is in the space of the ∗ section, service and maintenance work will become still easier if it vacates 7 7/8 in. or more.



(Length : in.)

- Where pipe between indoor and outdoor units is possible within the allowable limit.
  (Refer to the installation manual for the outdoor unit.)
- Install the indoor and outdoor units, power wire and connecting wires at least 3.5 ft. away from televisions or radios in order to prevent image interference or noise. (Depending on the radio waves, a distance of 3.5 ft. may not be sufficient enough to eliminate the noise.)

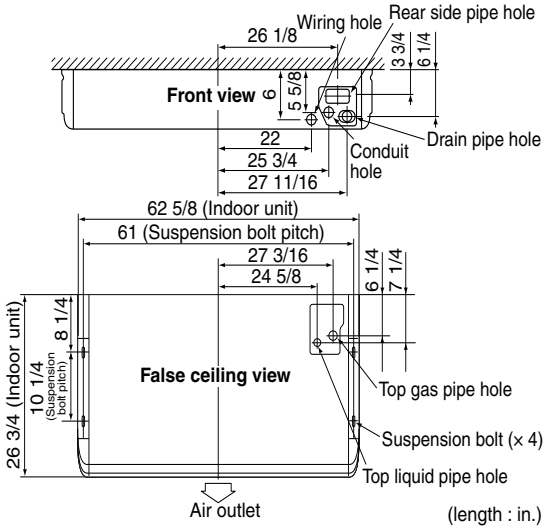
(2) Use suspension bolts for installation. Check whether the ceiling is strong enough to support the weight of the unit or not. If there is a risk, reinforce the ceiling before installing the unit.
(Installation pitch is marked on the paper pattern for installation. Refer to it to check for points requiring reinforcing.)

(3) This product may be installed on ceilings up to 10.6 ft. from the floor.

(4) A direction of installation.
- Refrigerant piping : the rear side, right side or upper part.
- Wiring : only the rear side.
- Drain piping : the rear right side or the right side.
  (As the rear left, installation is impossible.)

4. PREPARATIONS BEFORE INSTALLATION

(1) Relation of holes for indoor unit, suspension bolt position, piping and wiring.



(length : in.)

(2) Make holes for suspension bolts, refrigerant and drain pipe, and wire.
- Refer to the paper pattern for installation.
- Select the location for each of holes and open the holes in the ceiling.

(3) Remove the parts from the indoor unit.

(3-1) Detach the suction grille.
- Slide the locking knobs (×2) on the suction grille inward (direction of arrows) and lift upwards. **(Refer to Fig. 1)**
- With the suction grille open, remove the suction grille forward, holding on to the rear tabs (×2) on the suction grille. **(Refer to Fig. 2)**

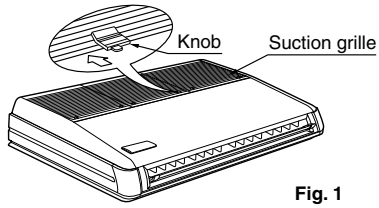


Fig. 1

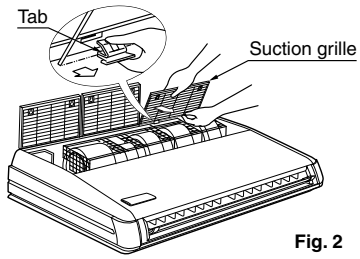


Fig. 2

(3-2) Remove the decoration panels (left and right) and the protection net.
- After removing the securing screws for the decoration panels (one each), pull them forward (in the direction of the arrow) and remove them. **(Refer to Fig. 3)**
- Remove the securing screws for the protection net. **(Refer to Fig. 3)**

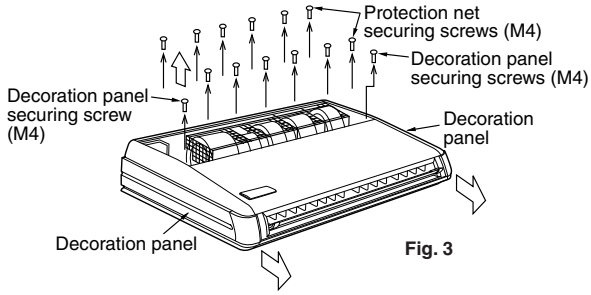


Fig. 3

- Raise one side of the protection net upwards (in the direction of the arrow (i)) and remove back (the arrow (ii)). **(Refer to Fig. 4, 5)**
- Take out the accessories.

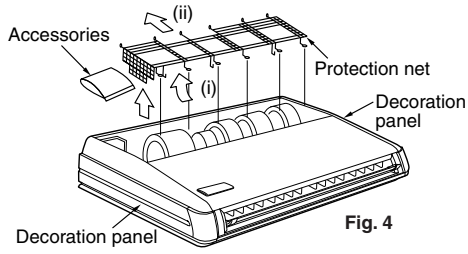


Fig. 4

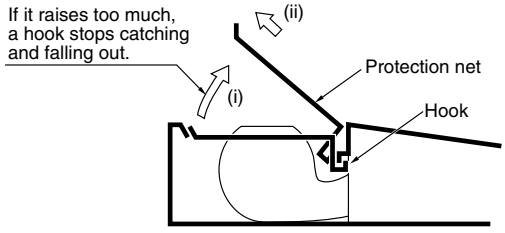


Fig. 5

(3-3) Remove the rear metal plate for transmission wire, remote controller wire and refrigerant pipe.

- It is necessary to drill the knock out hole in the removable part. Knock down several times with a punch and hammer and remove the removable part with pliers.
- When setting the refrigerant pipe to the rear side, remove the securing screws and the metal plate. **(Refer to Fig. 6)**.

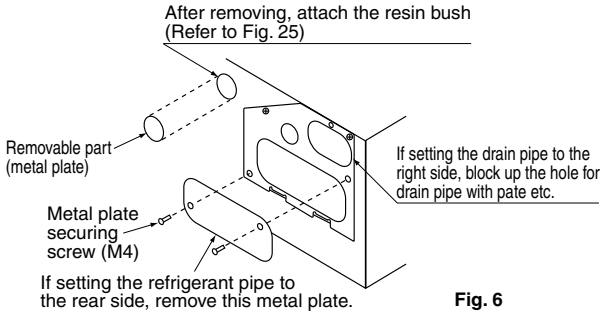

After removing, attach the resin bush
(Refer to Fig. 25)
Removable part
(metal plate)
If setting the drain pipe to the
right side, block up the hole for
drain pipe with pate etc.
Metal plate
securing
screw (M4)
If setting the refrigerant pipe to
the rear side, remove this metal plate.

Fig. 6

(3-4) Remove the hanger brackets.

- Loosen the 2 bolts (M8) used to attach the hanger brackets which are on each side (4 places left and right) to within 3/8 in.. **(Refer to Fig. 7, 8)**
- After removing the securing screws (M5) for the hanger brackets which are on the rear side, pull the hanger brackets back (in the direction of the arrow), and remove them. **(Refer to Fig. 8)**

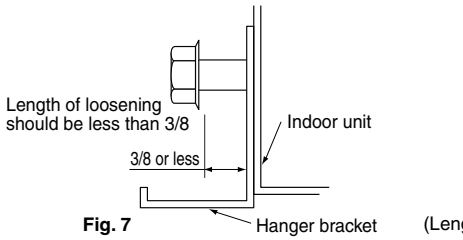


Fig. 7 (Length : in.)

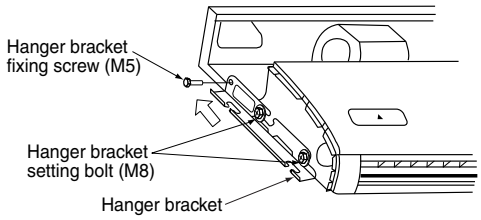


Fig. 8

(4) Attach the suspension bolts. (Use suspension bolts which are W3/8 or M8-M10 in size.)

- Adjust the distance of the suspension bolts from the ceiling in advance. **(Refer to Fig. 9)**

NOTE

- Use a hole-in anchor for existing ceilings, and a sunken insert, sunken anchor or other field supplied parts for new ceilings to reinforce the ceiling to bear the weight of the unit. Adjust clearance from the ceiling before proceeding further.

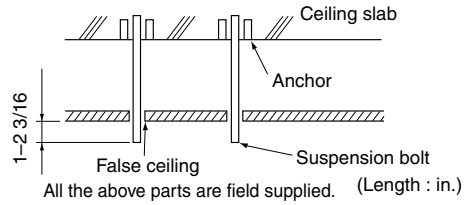


Fig. 9

5. INDOOR UNIT INSTALLATION

It may be easier to attach accessory parts before installing the indoor unit. Therefore, please also read the instruction manuals which are provided with the accessory parts.

As for the parts to be used for installation work, be sure to use the provided accessories and specified parts designated by our company.

(1) Secure the hanger brackets to the suspension bolts. (Refer to Fig. 10)

NOTE

- To ensure they are safely secured, use the included washers, and secure them with double nuts to make sure.

(2) Lift the indoor unit's main body, insert the bolts (M8) for the hanger brackets into the attachment part on the hanger brackets, while sliding the main body from the front. (Refer to Fig. 11)

(3) Fasten the bolts for the hanger brackets (M8) securely in 4 places, left and right. (Refer to Fig. 11)

(4) Replace the screws for the hanger brackets which had been removed (M5) securely in 2 places left and right. This is necessary to prevent any forward and back slide in the main body of the indoor unit. (Refer to Fig. 11)

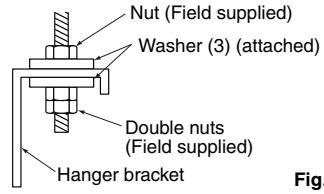


Fig. 10

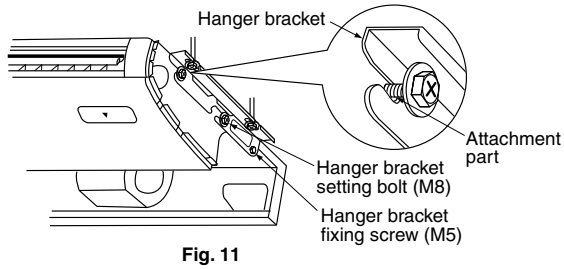


Fig. 11

(5) When hanging the indoor unit main body, be sure to use a level or a plastic tube with water in it to make sure the drain piping is set either level or slightly tilted, in order to ensure proper drainage. (Refer to Fig. 12)

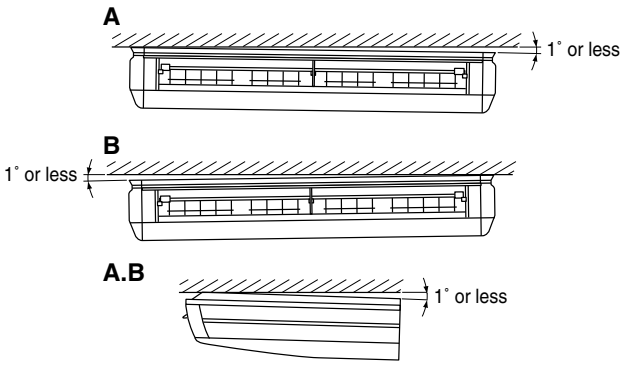


Fig. 12

A. When the drain piping is tilted to the right, or to the right and back.

Place it level, or tilt it slightly to the right or the back. (1° or less.)

B. When the drain piping is tilted to the left, or to the left and back.

Place it level, or tilt it slightly to the left or the back. (1° or less.)

CAUTION

- Setting the unit at an angle opposite to the drain piping might cause a water leakage.

6. REFRIGERANT PIPING WORK

DANGER

- Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan heater, stove or cooking device. Exposure to this gas could cause severe injury or death.

CAUTION

- **Use a pipe cutter and flare suitable for the type of refrigerant.**
- **To prevent dust, moisture or other foreign matter from infiltrating the tube, either pinch the end or cover it with tape.**
- **Do not allow anything other than the designated refrigerant to get mixed into the refrigerant circuit, such as air, etc. If any refrigerant gas leaks while working on the unit, ventilate the room thoroughly right away.**

6-1 GENERAL INSTRUCTIONS

- **For refrigerant pipe of outdoor units, see the installation manual attached to the outdoor unit.**
- **Execute thermal insulation work completely on both sides of the gas pipe and the liquid pipe or water or water leakage can result.**

  (Be sure to use insulation that is designed for use with HVAC Systems.)
- **Also, in cases where the temperature and humidity of the refrigerant pipe sections might exceed 86°F or RH 80%, reinforce the thermal insulation. (3/4 in. or thicker)**

  Condensate may form on the surface of the insulation pipe cover.
- **Before refrigerant pipe work, check which type of refrigerant is used.**

  Proper operation is not possible if the types of refrigerant are not the same.

6-2 CONNECTING THE REFRIGERANT PIPE

- The outdoor unit is charged with refrigerant.
- Use copper alloy seamless pipes.
- Be sure to use both a spanner and torque wrench together, as shown in the drawing, when connecting or disconnecting pipes to/from the unit. **(Refer to Fig. 13)**
- Refer to “Table 2” to determine the proper tightening torque.
- Refer to “Table 2” for the dimensions of flare shape.
- When connecting the flare nut, coat the flare section with ester oil or ether oil, rotate three or four times first, then screw in. **(Refer to Fig. 14)**

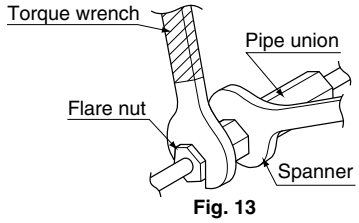


Fig. 13

CAUTION

- Be careful for oil not to adhere to any portions other than a flare part. If oil adhere to resin parts etc., there is a possibility of damaging by deterioration.

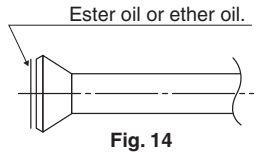
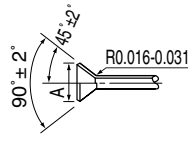


Fig. 14

NOTE

- Use the flare nut included with the unit main body.

Table 2

Pipe size (in.)	Tightening torque (ft. lbf)	Flare dimensions A (in.)	Flare shape (in.)
ϕ3/8	24.1-29.4	0.504-0.520	
ϕ5/8	45.6-55.6	0.760-0.776	

CAUTION

- Overtightening may damage the flare and cause a refrigerant leakage

Not recommended but in case of emergency

You must use a torque wrench, but if you are obliged to install the unit without a torque wrench, you may follow the installation method mentioned below.

When you keep on tightening the flare nut with a spanner, there is a point where the tightening torque suddenly increases. From that position, further tighten the flare nut the angle shown below :

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Table 3

Pipe size (in.)	Further tightening angle	Recommended arm length of tool (in.)
ϕ3/8	60 to 90 degrees	Approx. 7 7/8
ϕ5/8	30 to 60 degrees	Approx. 11 13/16

After the work is finished, make sure to check that there is no gas leak.

6-3 BRAZING REFRIGERANT PIPING

⚠ CAUTION

CAUTION TO BE TAKEN WHEN BRAZING REFRIGERANT PIPING

"Do not use flux when brazing refrigerant pipe. Therefore, use the phosphor copper brazing filler metal (BCuP) which does not require flux."
(Flux has an extremely negative effect on refrigerant piping systems. For instance, if chlorine based flux is used, it will cause pipe corrosion. If the flux contains fluorine, it will damage the refrigerant oil.)

- Before brazing local refrigerant pipe, nitrogen gas shall be blown through the pipe to expel air from the pipe.
  If you brazing is done without nitrogen gas blowing, a large amount of oxide film develops inside the pipe, and could cause system malfunction.
- When brazing the refrigerant pipe, only begin brazing after having carried out nitrogen substitution or while inserting nitrogen into the refrigerant pipe. Once this is done, connect the indoor unit with a flared or a flanged connection.
- Nitrogen should be set to 2.9 psi with a pressure-reducing valve if brazing while inserting nitrogen into the pipe. **(Refer to Fig. 15)**

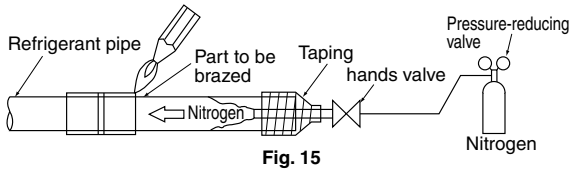

Fig. 15

⚠ DANGER

- Use of oxygen may cause an explosion resulting in serious injury or death. Only use nitrogen gas.

⚠ CAUTION

- Be sure to insulate any field piping all the way to the piping connection inside the unit. Any exposed piping may cause condensate or a burn if touched.

6-4 PIPING INSULATION

- Make absolutely sure to execute thermal insulation works on the pipe-connecting section after checking gas leakage by thoroughly studying the following figure and using the insulation pipe cover (6) and (7). (Fasten both ends with the clamps (4).) **(Refer to Fig. 16)**
- Wrap the small sealing pad (9) only around the insulation for the joints on the gas piping side. **(Refer to Fig. 16)**

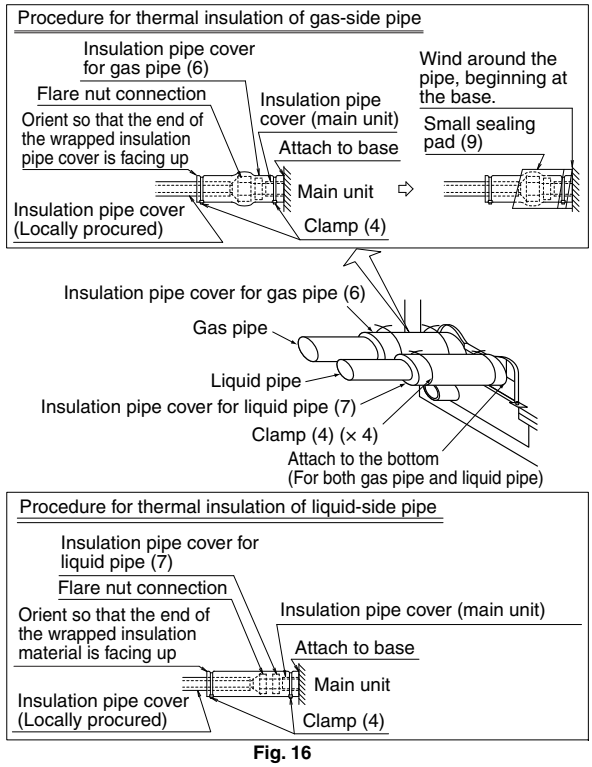
Procedure for thermal insulation of gas-side pipe
Insulation pipe cover for gas pipe (6)
Flare nut connection
Orient so that the end of the wrapped insulation pipe cover is facing up
Insulation pipe cover (main unit)
Attach to base
Main unit
Insulation pipe cover (Locally procured)
Clamp (4)
Wind around the pipe, beginning at the base.
Small sealing pad (9)
Insulation pipe cover for gas pipe (6)
Gas pipe
Liquid pipe
Insulation pipe cover for liquid pipe (7)
Clamp (4) (× 4)
Attach to the bottom
(For both gas pipe and liquid pipe)
Procedure for thermal insulation of liquid-side pipe
Insulation pipe cover for liquid pipe (7)
Flare nut connection
Orient so that the end of the wrapped insulation material is facing up
Insulation pipe cover (main unit)
Attach to base
Main unit
Insulation pipe cover (Locally procured)
Clamp (4)

Fig. 16

(1) For piping facing back.

- Remove the rear metal plate for pipe. **(Refer to Fig. 17)**
- The figure of the direction of back shows when both the piping and drain pipe are set backward.
  When setting the piping to face up or right, attach the rear metal plate for refrigerant pipe and plug a hole for drain pipe. (See "4 PREPARATIONS BEFORE INSTALLATION" (3-3) on page 6)

(2) For piping facing up.

- When setting the piping to face up, the L-shaped branch pipe kit sold separately is required.
- Removing the top penetration lid and use the L-shaped branch pipe kit sold separately to set the pipe. **(Refer to Fig. 18, 19)**

(3) For piping facing right.

- Cut out a slit hole on the decoration panel (right) and set the pipe. **(Refer to Fig. 17)**

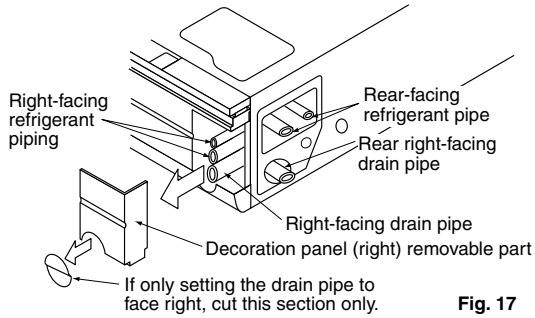
Right-facing refrigerant piping
Rear-facing refrigerant pipe
Rear right-facing drain pipe
Right-facing drain pipe
Decoration panel (right) removable part
If only setting the drain pipe to face right, cut this section only.

Fig. 17

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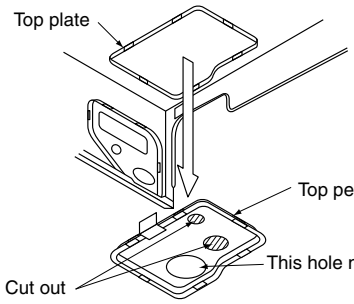

Fig. 18 (A figure from an inside bottom)

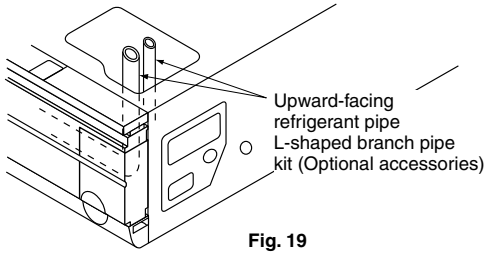

Fig. 19

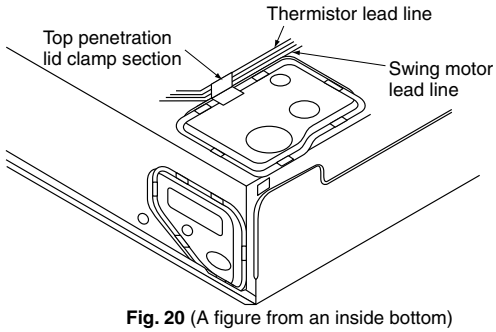

Fig. 20 (A figure from an inside bottom)

- When piping is complete, cut the removed penetration lid into the shape of the pipe using scissors and attach.
  As when before removing the top penetration lid, secure the lead lines for the swing motor and thermistor by passing them through the clamp section on the top penetration lid.
  (Refer to Fig. 18, 20)
- When doing this, block any gaps between the pipe penetration lid and the pipes using putty to prevent dust from entering the indoor unit.

7. DRAIN PIPING WORK

(1) Carry out the drain piping.

- Make sure piping provides proper drainage.
- You can select whether to bring the drain piping out from the rear right or right. For rear right-facing and right-facing situations, refer to “6. REFRIGERANT PIPING WORK” on page 7.
- Make sure the pipe diameter is the same or bigger than the branch piping. (vinyl-chloride piping, nominal diameter 1 in., external diameter 1 1/4 in.)
- Make sure the piping is short, has at least a 1/100 slope, and can prevent air pockets from forming. **(Refer to Fig. 21)**
- Do not allow any slack to gather in the drain pipe inside the indoor unit.
  (Slack in the drain pipe can cause the suction grille to break.)

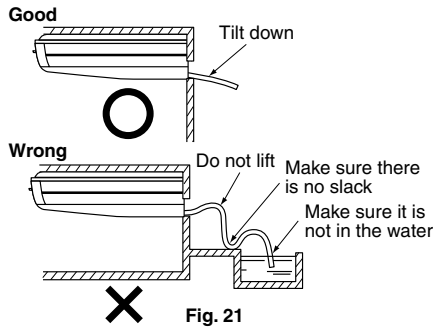

Fig. 21

CAUTION

- Water accumulating in the drain piping can cause the drain to clog.

- Be sure to use the drain pipe (1) and metal clamp (2).
  Also, insert the drain pipe completely into the drain socket, and securely attach the metal clamp bracket inside the gray tape area on the inserted tip of the drain pipe. **(Refer to Fig. 22)**
  Screw the screws on the metal clamp bracket until there is 5/32 in. left. (Pay attention to the direction of the attachment to prevent the metal clamp bracket from coming into contact with the suction grille.) **(Refer to Fig. 23)**

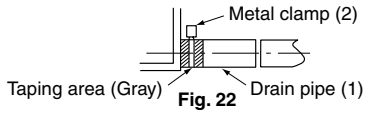

Fig. 22

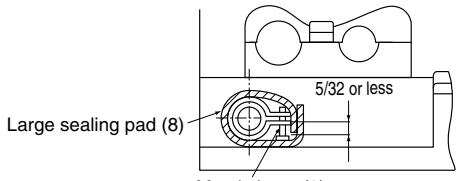

Fig. 23 (Length : in.)

- Insulate the metal clamp bracket and drain pipe from the bottom using the large sealing pad (8). **(Refer to Fig. 23)**
- Be sure to insulate all drain piping running indoors.

(2) Check to make sure the water flows smoothly after piping is complete.

- Slowly pour 600 ml of drain-checking water into the drain pan through the air outlet.

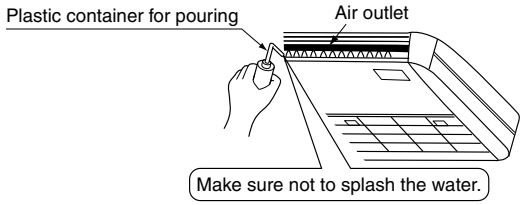

Fig. 24

CAUTION

- Drain piping connections :
  Do not connect the drain piping directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipes and corrode the heat exchanger.

- Keep in mind that it will become the cause of getting drain pipe blocked if water collects on drain pipe.

8. ELECTRIC WIRING WORK

8-1 GENERAL INSTRUCTIONS

- All field supplied parts and materials and electric works must conform to local codes.
- Use copper wire only.
- For electric wiring work, refer to also "Wiring diagram label" attached to the control box lid.
- For remote controller wiring details, refer to the installation manual attached to the remote controller.
- All wires must be performed by an authorized electrician.
- An earth leakage circuit breaker capable of shutting down power supply to the entire system must be installed.
- Refer to the installation manual attached to the outdoor unit for the size of power supply wiring connected to the outdoor unit, the capacity of the circuit breaker and switch, and wiring instructions.
- Be sure to ground the air conditioner.

⚠ DANGER

- Do not ground units to water pipes, telephone wires or lightning rods because incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.

8-2 ELECTRICAL CHARACTERISTICS

Units				Power supply		Fan motor	
Model	Hz	Volts	Voltage range	MCA	MFA	W	FLA
FHQ24MVJU	60	208-230V	Max. 253V Min. 187V	1.3	15	130	1.0
FHQ30MVJU				1.3	15	130	1.0
FHQ36MVJU				1.4	15	130	1.1
FHQ42MVJU				1.4	15	130	1.1

MCA : Min. Circuit Amps (A); MFA : Max. Fuse Amps (A)
W: Fan Motor Rated Output (W); FLA : Full Load Amps (A)

8-3 SPECIFICATIONS FOR FIELD SUPPLIED FUSES AND WIRES

Model	Power supply wiring		Remote controller wiring Transmission wiring	
	Field fuses ⊟	Size	Wire	Size
FHQ24MVJU	15A	Wire size must comply with local codes.	Sheathed wire (2 wires)	AWG 18-16
FHQ30MVJU				
FHQ36MVJU				
FHQ42MVJU				

Allowable length of transmission wire between indoor/outdoor units and between the indoor unit and the remote controller wire are as follows.

(1) Outdoor unit – Indoor unit : Max. 3280 ft.

(2) Indoor unit – Remote controller : Max. 1640 ft.

9. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER

9-1 HOW TO CONNECT WIRES

⚠ CAUTION

- Even if the control box lid is removed, pull the remote controller wire, transmission wire and the power supply wire inside the unit using conduits for each, so that the wires do not come into contact with the opening section of the metal casing.
- Pass conduits through the wall and secure along with the refrigerant pipe in order to prevent external pressure being applied to transmission wire and power supply wire.
- To avoid short circuits in the electric parts box, be sure to apply the sealing material or putty (not included) to the wiring hole to prevent the infiltration of water, insects or other small creatures.
- Arrange the wires and fix a lid firmly so that the lid does not float during wiring work.
- Do not clamp remote controller wire and transmission wire together with power supply wire. Doing so may cause malfunction.
- Remote controller wire, transmission wire and power supply wire should be located at least 5 in. from other electric wires. Not following this guideline may result in malfunction due to electrical noise.

<Method of wiring power supply, units and connecting remote controller wiring> (Refer to Fig. 26)

- Attaching the resin bush
  Attach the resin bush (10) for remote controller wiring.
- Installation of conduit
  Insert the conduit for power supply wire in the conduit hole, and fix it with the lock nut.

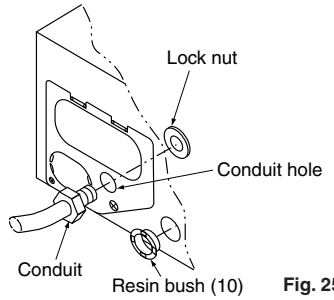

Fig. 25

- **Power supply wire**
  Holding the control box lid, loosen the 2 securing screws, remove the control box lid, match up the phases on the power supply terminal block inside (2P), and make the connections. After this is done, use the attached clamp (4) to bind wire between units to the anchor point. **(Refer to Fig. 27)**
- **Remote controller wire and transmission wire**
  Holding the control box lid, loosen the 2 securing screws, remove the control box lid.
  Thread the remote controller wire and transmission wire through the insulating tube (11) and secure with the clamp (4), and cut off the insulating tube (11) to suitable length. Pull the wires inside through resin bush and connect the wires to the transmission terminal block (6P) inside the control box. After connecting, use the clamp (4) to bind the remote controller wire together with the transmission wire to the anchor. **(Refer to Fig. 26, 27, 28)**

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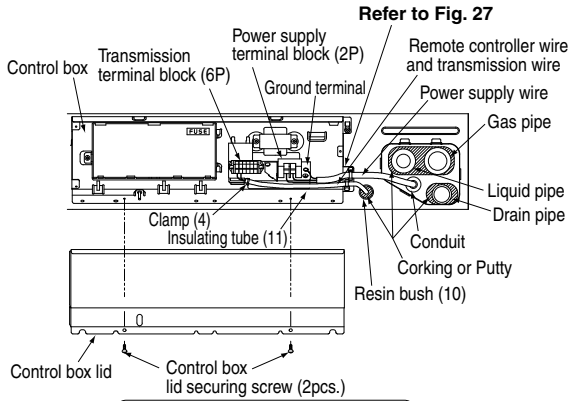


Fig. 26

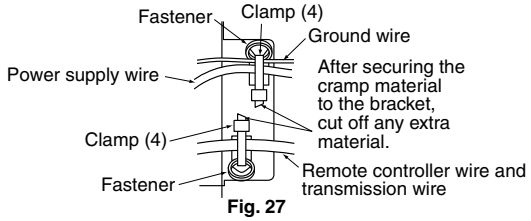


Fig. 27

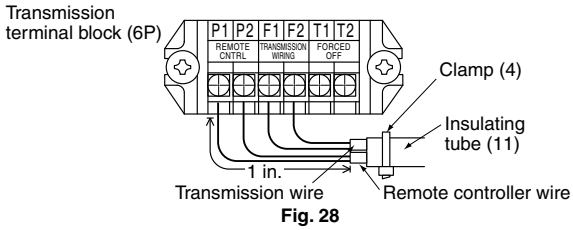


Fig. 28

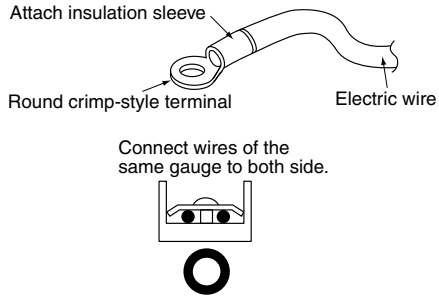
- In the insulating tube (11), it can let the remote controller wire and transmission wire pass to 2.

WARNING

- Never connect power supply wiring to the terminal block for remote controller wiring as this could damage the entire system.
- Use only specified wire and connect wires to the terminal tightly. Be careful wires do not place external stress on terminals. Keep wires in neat order so as to not obstruct other equipment. Make sure that the electric box lid fits tightly. Incomplete connections could result in overheating and, in worse case, result in electric shock or fire.

NOTE

1. Use round crimp-style terminals for connecting wires to the power supply terminal block.
   If unavailable, observe the following points when wiring.
   - Do not connect wires of different gauge to the same power supply terminal.
     (Looseness in the connection may cause overheating.)
   - Use the specified electric wire. Connect the wire securely to the terminal. Lock the wire down without applying excessive force to the terminal. (Tightening torque: 0.97 ft lbf ±10%)



2. Tightening torque for the terminal screws.
   - Use the correct screwdriver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
   - If the terminal screws are tightened too hard, screws might be damaged.
   - Refer to the table below for the tightening torque of the terminal screws.

Table 4

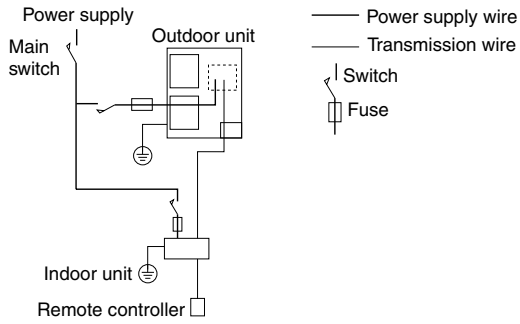
Terminal	Size	Tightening torque (ft-lbf)
Transmission terminal block (6P)	M3.5	0.58 – 0.72
Power supply terminal block (2P)	M4	0.87 – 1.06
Ground terminal	M4	0.87 – 1.06

3. Do not connect wires of different gauge to the same ground terminal. Looseness in the connection may deteriorate protection.
4. Outside of the unit, keep transmission wire at least 5 in. away from power supply wire. The equipment may malfunction if subjected to electrical (external) noise.
5. For remote controller wire, refer to the “INSTALLATION MANUAL OF REMOTE CONTROLLER” attached to the remote controller.

9-2 WIRING EXAMPLE

- Fit the power supply wire of each unit with a switch and fuse as shown in the drawing.

COMPLETE SYSTEM EXAMPLE



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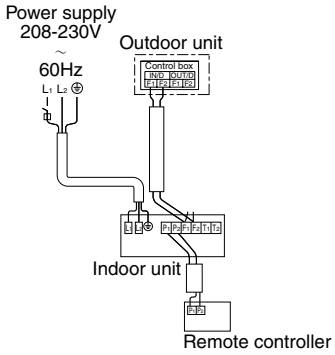
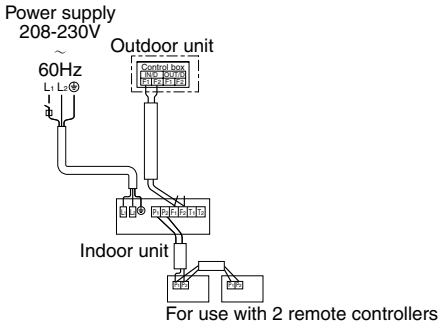
1. When using 1 remote controller for 1 indoor unit. (Normal operation)



2. When using 2 remote controllers for 1 indoor unit.



NOTE

1. All transmission wires except for remote controller wire are polarized and must match the terminal symbol.
2. A single switch can be used to supply power to units on the same system. However, branch switches and branch circuit breakers must be selected carefully.
3. Do not ground the equipment on gas pipes, water pipes or lightning rods, or crossground with telephones. Improper grounding could result in electric shock.

10. ATTACHING THE SUCTION GRILLE, THE DECORATION PANELS AND THE PROTECTION NET

Once wiring is complete, firmly attach the control box lid, the suction grille, the decoration panels and the protection net in the order opposite to detachment.

- Attaching the protection net
  Attach the protection net from the way of the hook (i), fix 2 securing screws of the middle of the other side first (ii), then fix the remaining securing screws (iii).

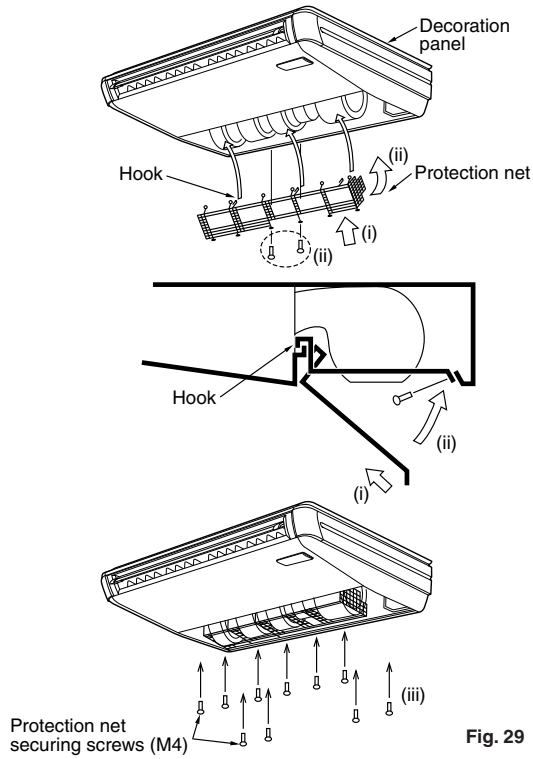


Fig. 29

11. FIELD SETTING

Make sure the control box lids are closed on the indoor and outdoor units, and turn on the power.
Field setting must be made from the remote controller in accordance with the installation manual.

- Setting can be made by changing the “Mode No.”, “FIRST CODE NO.”, and “SECOND CODE NO.”.
- For setting and operation, refer to the “FIELD SETTING” in the installation manual of the remote controller.

11-1 Setting air filter sign

- Remote controllers are equipped with liquid crystal display air filer signs to display the time to clean air filters.
- Change the SECOND CODE NO. according to “Table 5” depending on the amount of dirt or dust in the room. (SECOND CODE NO. is factory set to “01” for air filter contamination-light.)

Table 5

Setting	Spacing time of display air filter sign (long life type)	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Air filter contamination-light	Approx. 2500 hrs	10 (20)	0	01
Air filter contamination-heavy	Approx. 1250 hrs			02

<When using wireless remote controllers>

- When using wireless remote controllers, wireless remote controller address setting is necessary. Refer to the installation manual attached to the wireless remote controller for setting instructions.

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11-2 2 remote controllers control (Controlling 1 indoor unit by 2 remote controllers)

- When using 2 remote controllers, one must be set to "MAIN" and the other to "SUB".

MAIN/SUB CHANGEOVER

(1) Insert a ⊖ screw driver into the recess between the upper and lower part of remote controller and, working from the 2 positions, pry off the upper part.
The remote controller PC board is attached to the upper part of remote controller. **(Refer to Fig. 30)**

(2) Turn the MAIN/SUB changeover switch on one of the 2 remote controllers PC boards to "S". (Leave the switch of the other remote controllers set to "M".) **(Refer to Fig. 31)**

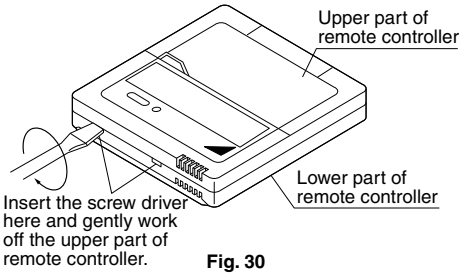

Upper part of remote controller
Lower part of remote controller
Insert the screw driver here and gently work off the upper part of remote controller.

Fig. 30

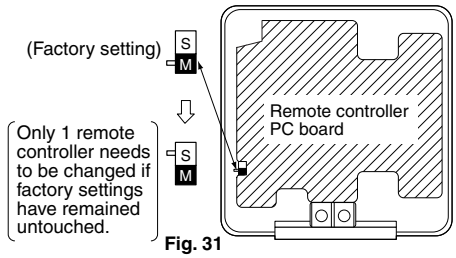


Fig. 31

Wiring Method
(See "8. ELECTRIC WIRING WORK" and "9. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER" on page from 10 to 12.)

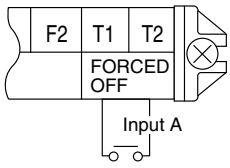
(3) Remove the control box lid.

(4) Add 2nd remote controller to the transmission terminal block (P1, P2) in the control box. (There is no polarity.) (Refer to Fig. 28 on page 11 and Table 4 on page 11)

11-3 COMPUTERISED CONTROL (FORCED OFF AND ON/OFF OPERATION)

See "FIELD SETTING" on page 12 for local settings.

(1) Wire specifications and how to perform wiring
- Connect the input from outside to terminals T1 and T2 of the transmission terminal block.



Wire specification	Sheathed vinyl wire or cable (2 wires)
Gauge	AWG 18-16
Length	Max. 328 ft.
External terminal	Contact that can ensure the minimum applicable load of 15 V DC, 10 mA.

(2) Actuation
- The following table explains FORCED OFF and ON/OFF OPERATIONS in response to Input A.

FORCED OFF	ON/OFF OPERATION
Input "ON" stops operation (impossible by remote controllers.)	Input OFF → ON turns ON unit.
Input OFF enables control by remote controller.	Input ON → OFF turns OFF unit.

(3) How to select FORCED OFF and ON/OFF OPERATION
- Turn the power on and then use the remote controller to select operation.

11-4 CENTRALIZED CONTROL

- For centralized control, it is necessary to designate the group No. For details, refer to the manual of each optional controllers for centralized control.

12. TEST OPERATION

Refer to the section of "FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED." on page 4.

- Make sure if the service lids are closed on the indoor and outdoor units.
- After finishing the construction of refrigerant pipe, drain pipe and electric wire, conduct the check operation referring to the installation manual of the outdoor unit.
- The operation lamp of the remote controller will flash when a malfunction occurs. Check the malfunction code on the liquid crystal display to identify the point of trouble. An explanation of malfunction codes and the corresponding trouble is provided in the installation manual of the outdoor unit.
  It any of the items in Table 6 are displayed, there may be a problem with the wiring or power, so check the wiring again.

Table 6

Remote control display	Content
" [ ] " (under centralized control) is lit up	• There is a short circuit at the FORCED OFF terminals (T_1, T_2)
"U4" is lit up "UF" is lit up	• The power on the outdoor unit is off. • The outdoor unit has not been wired for power supply. • Incorrect wiring for the transmission wiring and / or FORCED OFF wiring. • The transmission wiring is cut.
No display	• The power on the indoor unit is off. • The indoor unit has not been wired for power supply. • Incorrect wiring for the remote controller wiring, the transmission wiring and / or the FORCED OFF wiring. • The remote controller wiring is cut.

- If "U3" is lit up, the malfunction code shows the check operation has not been performed yet.

12-1 HOW TO DIAGNOSE FOR MALFUNCTION

With the power on, it is possible to monitor the type of malfunction by looking at the malfunction code displayed in the remote controller.

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If nothing is displayed in the remote controller, check the following items before attempting a diagnosis based on the malfunction code, as they might be a cause.

- Disconnected or incorrect wiring (between power supply and the outdoor unit, between the outdoor and indoor units, and between the indoor unit and the remote controller)
- Burnt out indoor or outdoor unit fuse
- " 88 " will be displayed for a few seconds on the remote controller immediately after the power is turned on. This display indicates that the remote controller is being checked to see whether it is ok or not, and does not indicate a malfunction.

Diagnose with the display on the liquid crystal display remote controller.

1. With the wired remote controller. (NOTE 1)
   When the operation stops due to trouble, operation lamp flashed, and " " and the malfunction code are indicated in the liquid crystal display. In such a case, diagnose the fault contents by referring to the table on the malfunction code list it case of group control, the unit No. is displayed so that the indoor unit No. with the trouble can be recognized. (NOTE 2).
2. With the wireless remote controller.
   (Refer also to the operation manual attached to the wireless remote controller)
   When the operation stops due to trouble. the display on the indoor unit flashes. In such a case, diagnose the fault contents with the table on the malfunction code list looking for the malfunction code which can be found by following procedures. (NOTE 2)
   (1) Press the INSPECTION /TEST OPERATION button, " " is displayed and " 0 " flashes.
   (2) Press the PROGRAMMING TIME button and find the unit No. which stopped due to trouble.
   Number of beeps

3 short beeps	Perform all the following operations
1 short beep	Perform (3) and (6)
1 long beep	No trouble

   (3) Press the OPERATION MODE SELECTOR button and upper figure of the malfunction code flashes.
   (4) Continue pressing the PROGRAMMING TIME button unit it makes 2 short beeps and find the upper code.
   (5) Press the OPERATION MODE SELECTOR button and lower figure of the malfunction code flashes.
   (6) Continue pressing the PROGRAMMING TIME button unit it makes a long beep and find the lower code.
   - A long beep indicate the malfunction code.

NOTE

1. In case wired remote controller. Press the INSPECTION / TEST OPERATION button on remote controller, " " starts flashing.
2. Keep down the ON/OFF button for 5 seconds or longer in the inspection mode and the above trouble history disappears, after the trouble code goes on and off twice, followed by the code " 00 "(normal).
   The display changes from the inspection mode to the normal mode.

Order	Operation
(1)	Open gas side stop valve.
(2)	Open liquid side stop valve.
(3)	Electrify crank case heater for 6 hours.
(4)	Set to cooling with the remote controller and push " ON/OFF " button to start operation.
(5)	Push" /TEST "button twice and operate in TEST OPERATION MODE for 3 minutes.
(6)	Push" SWING "button and confirm its operation.
(7)	Push" /TEST "button and operate normally.
(8)	Confirm its function according to the operation manual.

12-2 MALFUNCTION CODE

- For places where the malfunction code is left blank, the " " indication is not displayed. Though the system continues operating, be sure to inspect the system and make repairs as necessary.
- Depending on the type of indoor or outdoor unit, the malfunction code may or may not be displayed.

Code	Malfunction/Remarks
A1	Indoor unit's PC board faulty
A3	Condensate level abnormal
A6	Indoor fan motor overloaded, overcurrent or locked.
A7	Air flow direction adjust motor is fault.
A9	Drive for electronic expansion valve is fault.
AJ	Type set improper
	Capacity data is wrongly preset. Or there is nothing programmed in the data hold IC.
C4	Sensor R2T for heat exchanger temperature is fault.
C5	Sensor R3T for heat exchanger temperature is fault.
C9	Sensor R1T for suction air temperature is fault.
CJ	Sensor for remote controller is fault.
	The remote controller thermistor does not function, but the system thermo run is possible.
E3	High pressure abnormal (outdoor unit)
E4	Low pressure abnormal (outdoor unit)
E5	Compressor motor lock malfunction
E7	Outdoor fan motor lock malfunction Outdoor fan instantaneous overcurrent malfunction
E9	Electronic expansion valve faulty (outdoor unit)
F3	Discharge pipe temperature abnormal (outdoor unit)
F6	The refrigerant is overcharged.
H9	Outdoor air thermistor faulty (outdoor unit)
J3	Discharge pipe thermistor faulty (outdoor unit)
J5	Suction pipe thermistor faulty (outdoor unit)
J6	Heat exchanger thermistor faulty (outdoor unit)
J9	Sensor for heat exchanger is fault.
JA	Sensor for high pressure is fault.
JC	Sensor for low pressure is fault.
L4	Overheated heat-radiating fin (outdoor)
	Inverter cooling defect.

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L5	Instantaneous overcurrent (outdoor)
	Possible earth fault or short circuit in the compressor motor.
L8	Electric thermal (outdoor)
	Possible electrical overload in the compressor or cut line in the compressor motor.
L9	Stall prevention (outdoor)
	Compressor possibly locked.
LC	Transmission malfunction between the outdoor control units' inverters (outdoor)
P1	Open-phase (outdoor)
P3	PC board temperature sensor malfunction (outdoor)
P4	Heat-radiating fin temperature sensor malfunction (outdoor)
PJ	Type set improper (outdoor unit)
	Capacity data is wrongly preset. Or there is nothing programmed in the data hold IC.
U0	Suction pipe temperature abnormal
U2	Power source voltage malfunction
	Includes the defect in K1M.
U3	The check operation has not performed.
U4 UF	Transmission error (indoor unit – outdoor unit)
	Miswiring between indoor and outdoor units or malfunction of the PC board mounted on the indoor and the outdoor units. If UF is shown, the wire between the indoor and outdoor units is not properly wired. Therefore, immediately disconnect the power supply and correct the wire. (The compressor and the fan mounted on the outdoor unit may start operation independent of the remote controller operation.) The power is not supplied to outdoor unit.
U9	Same transmission for in / outdoor unit is fault.
UA	Miss setting for multi system
	Setting is wrong for selector switch of multi-system. (see switch SS2 on the main unit's PC board)

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14.5 FAQ18PVJU / FAQ24PVJU

DAIKIN

SPLIT SYSTEM Air Conditioner Installation manual

CONTENTS

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1. SAFETY CONSIDERATIONS

Please read these “SAFETY CONSIDERATIONS” carefully before installing air conditioning equipment and be sure to install it correctly. After completing the installation, make sure that the unit operates properly during the start-up operation.
Please instruct the customer on how to operate the unit and keep it maintained.
Also, inform customers that they should store this installation manual along with the operation manual for future reference.
This air conditioner comes under the term “appliances not accessible to the general public”.
Meaning of danger, warning, caution and note symbols.

DANGER .....Indicates an imminently hazardous situation which,if not avoided, will result in death or serious injury.

WARNING .....Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION .....Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be sued to alert against unsafe practices.

NOTE .....Indicates situation that may result in equipment or property-damage-only accidents.

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⚠ DANGER

- **Do not ground the unit to water pipes, telephone wires or lightning rods as incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.**
- **Do not install unit in an area where flammable materials are present due to risk of explosion resulting in serious injury or death.**
- **Refrigerant gas is heavier than air and displaces oxygen. A massive leak could lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.**
- **If the refrigerant gas leaks during installation, ventilate the area immediately.**
  Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could result in severe injury or death.
- **After completing the installation work, check that the refrigerant gas does not leak.**
  Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could result in severe injury or death.
- **Safely dispose of the packing materials.**
  Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries. Tear apart and throw away plastic packaging bags so that children will not play with them. Children playing with plastic bags face the danger of death by suffocation.

⚠ WARNING

- **Ask your dealer or an authorized personnel to carry out installation work. Do not try to install the unit by yourself.**
  Improper installation may result in water leakage, electric shocks or fire.
- **Perform installation work in accordance with this installation manual.**
  Improper installation may result in water leakage, electric shocks or fire.
- **Be sure to use only the specified accessories and parts for installation work.**
  Failure to use the specified parts may result in water leakage, electric shocks, fire or the unit falling.
- **Install the air conditioner on a foundation strong enough to withstand the weight of the unit.**
  A foundation of insufficient strength may result in the equipment falling and causing injuries.
- **Carry out the specified installation work after taking account of strong winds, typhoons or earthquakes.**
  Improper installation work may result in the equipment falling and causing accidents.
- **Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by an authorized personnel according to local laws and regulations and this installation manual.**
  An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.
- **Make sure that all wiring is secured, the specified wires are used, and no external forces act on the terminal connections or wires.**
  Improper connections or installation may result in fire.
- **When wiring the power supply and connecting the remote controller wiring and transmission wiring, position the wires so that the electric parts box lid can be securely fastened.**
  Improper positioning of the electric parts box lid may result in electric shocks, fire or the terminals overheating.
- **Before touching electrical parts, turn off the unit.**
- **Do not touch the switch with wet fingers.**
  Touching a switch with wet fingers can cause electric shock.
- **Be sure to install an earth leakage breaker.**
  Failure to install an earth leakage breaker may result in electric shocks, or fire.
- **Do not install the air conditioner in the following locations:**
  (a) where a mineral oil mist or an oil spray or vapor is produced, for example in a kitchen. Plastic parts may deteriorate and fall off or result in water leakage.

(b) where corrosive gas, such as sulfurous acid gas, is produced. Corroding copper pipes or soldered parts may result in refrigerant leakage.
(c) near machinery emitting electromagnetic waves. Electromagnetic waves may disturb the operation of the control system and result in a malfunction of the equipment.
(d) where flammable gases may leak, where there are carbon fiber or ignitable dust suspensions in the air, or where volatile liquids such as thinner or gasoline are handled.
Operating the unit in such conditions may result in fire.

- **Heat exchanger fins are sharp enough to cut.**
  To avoid injury wear gloves to cover the fins when working around them.
- **Refrigerant pipes may be very hot or very cold during or immediately after operation.**
  Touching them could result in burns or frostbite. To avoid injury give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.

⚠ CAUTION

- **While following the instructions in this installation manual, insulate piping in order to prevent condensation.**
  Improper piping insulation may result in water leakage and property damage.
- **Be very careful about product transportation.**
  Some products use PP bands for packaging. Do not use any PP bands for a means of transportation. It is dangerous.
- **Do not turn off the power immediately after stopping operation.**
  Always wait at least five minutes before turning off the power. Otherwise, water leakage and trouble may occur.
- **Make sure to provide for adequate measures in order to prevent that the outdoor unit be used as a shelter by small animals.**
  Small animals making contact with electrical parts can cause malfunctions, smoke or fire. Please instruct the customer to keep the area around the unit clean.

⚠ NOTE

- **Install the indoor and outdoor units, power supply wiring and connecting wires at least 3.5ft. away from televisions or radios in order to prevent image interference or noise.**
  (Depending on the radio waves, a distance of 3.5ft. may not be sufficient enough to eliminate the noise.)
- **Remote controller (wireless kit) transmitting distance can result shorter than expected in rooms with electronic fluorescent lamps. (inverter or rapid start types)**
  Install the indoor unit as far away from fluorescent lamps as possible.
- **Dismantling of the unit, treatment of the refrigerant, oil and eventual other parts, should be done in accordance with the relevant local and national regulations.**

2. BEFORE INSTALLATION

- **When moving the unit while removing it from the packing case, be sure to lift it by the four hanger brackets. Avoid putting any pressure on other parts, especially, horizontal flaps, the refrigerant piping, drain piping, and other resin parts.**
- Be sure to remove a cushion (corrugated paper) located between the heat exchanger and the right air filter.
- Be sure to check the type of R410A refrigerant to be used before installing the unit. (Using an incorrect refrigerant will prevent normal operation of the unit.)
- The accessories needed for installation must be retained in your custody until the installation work is completed. Do not discard them!
- Decide upon a line of transport.
- Leave the unit inside its packaging while moving, until reaching the installation site. Where unpacking is unavoidable, use a sling of soft material or protective plates together with a rope when lifting, to avoid damage or scratches to the unit.

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- For the installation of an outdoor unit, refer to the installation manual attached to the outdoor unit.
- When using the wireless remote controller, refer to the installation manual attached to the wireless remote controller.
- Do not install or operate the unit in rooms mentioned below.
  - **Laden with mineral oil, or filled with oil vapor or spray like in kitchens. (Plastic parts may deteriorate which could eventually cause the unit to fall out of place, or could lead to leaks.)**
  - **Where corrosive gas like sulfurous gas exists. (Copper tubing and brazed spots may corrode which could eventually lead to refrigerant leaks.)**
  - **Where machines can generate electromagnetic waves. (Control system may malfunction.)**
  - **Where the air contains high levels of salt such as that near the ocean and where voltage fluctuates greatly such as that in factories.**
    Also in vehicles or vessels.
- This unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment. If installed as a household appliance it could cause electromagnetic interference.

⚠ WARNING

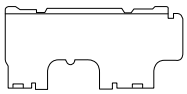
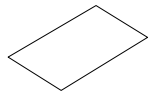
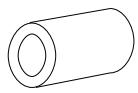
- Entrust installation to the place of purchase or an authorized serviceman. Improper installation could lead to leaks and, in worse cases, electric shock of fire.
- Use of unspecified parts could lead to the unit falling, leaks and, in worse cases, electric shock or fire.

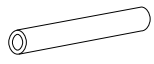
⚠ NOTE

- Be sure to read this manual before installing the indoor unit.

2-1 ACCESSORIES

Check the following accessories are included with your unit.

Name	(1) Installation panel	(2) Attachment screws for the installation panel	(3) Paper pattern for installation	(4) Insulating tape
Quantity	1 set	9 pcs.	1 pc.	1 pc.
Shape		M4 × 25L		

Name	(5) Clamp	(6) Securing screws	(7) Insulating tube	
Quantity	1 large 4 small	2 pcs.	1 long 1 short	
Shape		M4 × 12L		(Other) • Operation manual • Installation manual

2-2 OPTIONAL ACCESSORIES

Remote controller type	Model
Wired type	BRC1C71
Wireless type	BRC7E818

FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED.

1. Items to be checked after completion of work

Items to be checked	If not properly done, what is likely to occur	Check
Are the indoor and outdoor unit fixed firmly?	The units may drop, vibrate or make noise.	
Is the gas leak test finished?	It may result in insufficient cooling.	
Is the unit fully insulated?	Condensate water may drip.	
Does drainage flow smoothly?	Condensate water may drip.	
Does the power supply voltage correspond to that shown on the name plate?	The unit may malfunction or the components burn out.	
Are wiring and piping correct?	The unit may malfunction or the components burn out.	
Is the unit safely grounded?	It may be dangerous at electric leakage.	
Is wiring size according to specifications?	The unit may malfunction or the components burn out.	
Is something blocking the air outlet or inlet of either the indoor or outdoor units?	It may result in insufficient cooling.	
Are refrigerant piping length and additional refrigerant charge noted down?	The refrigerant charge in the system is not clear.	

2. Items to be checked at time of delivery

* Also review the “SAFETY CONSIDERATIONS”

Items to be checked	Check
Did you explain about operations while showing the operation manual to your customer?	
Did you hand the operation manual over to your customer?	

2-3 NOTE TO THE INSTALLER

Be sure to instruct customers how to properly operate the unit (especially cleaning filters, operating different functions, and adjusting the temperature) by having them carry out operations themselves while looking at the manual.

3. SELECTING INSTALLATION SITE

(1) Select an installation site where the following conditions are fulfilled and that meets with your customer's approval.

- In the upper space (including the back of the ceiling) of the indoor unit where there is no possible dripping of water from the refrigerant pipe, drain pipe, water pipe, etc.
- Where the wall is strong enough to bear the indoor unit weight.
- Where sufficient clearance for installation and maintenance can be ensured. **(Refer to Fig. 1 and Fig. 2)**
- Where optimum air distribution can be ensured.
- Where nothing blocks the air passage.
- Where condensate can be properly drained.

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- Where the wall is not significantly tilted.
- Where piping between indoor and outdoor units is possible within the allowable limit. (Refer to the installation manual of the outdoor unit.)
- Install the indoor and outdoor units, power supply wiring and connecting wires at least 3.5ft. away from televisions or radios in order to prevent image interference or noise. (Depending on the radio waves, a distance of 3.5ft. may not be sufficient enough to eliminate the noise.)
- Where the cool (warm) air reaches all across the room.

[Space required for installation (in.)]

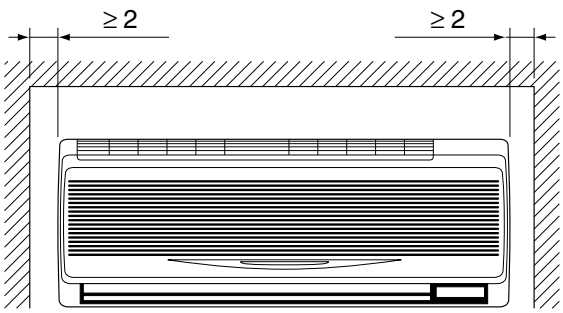

Fig. 1

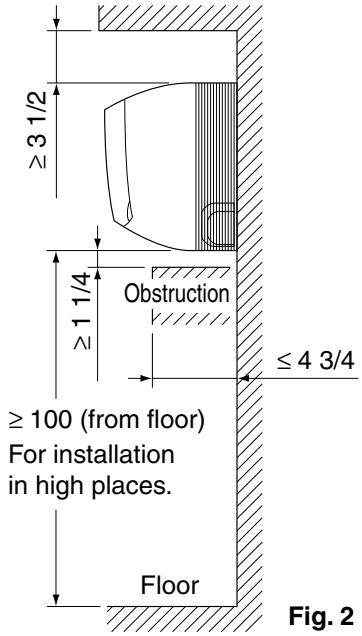

Fig. 2

(2) Consider whether the place where the unit will be installed can support the full weight of the unit, and reinforce it with boards and beams, etc. if needed before proceeding with the installation. Also, reinforce the place to prevent vibration and noise before installing.
(The installation pitch can be found on the paper pattern for installation (3), so refer to it when considering the necessity for reinforcing the location.)

(3) The indoor unit may not be directly installed on the wall. Use the attached installation panel (1) before installing the unit.

⚠ DANGER

- Do not install unit in an area where flammable materials are present due to risk of explosion resulting in serious injury or death.

⚠ WARNING

- If the supporting structural members are not strong enough to take the unit's weight, the unit could fall out of place and cause serious injury.

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4. INDOOR UNIT INSTALLATION

• Use only accessories and parts which are of the designated specification when installing.

⚠ CAUTION

• Install so that the unit does not tilt to either side or forward.
• Do not hold the unit by the horizontal flaps when lifting it. (This may damage the horizontal flaps.)

(1) Open the piping through-hole.

• The refrigerant pipe and drain pipe can be passed out in one of 5 directions: left, bottom-left, back-left, bottom-right, and back-right. **(Refer to Fig. 3)**
• Using the paper pattern for installation (3), choose where to pass the piping out and open a through-hole (ϕ3 1/8") in the wall.
Open the hole so that there is a downward slope for the drain piping. (See " 6.DRAIN PIPING WORK ")

(2) Remove the installation panel (1) from the unit and attach to the wall.

(The installation panel is temporarily attached to the unit with a screw. (In case of 12 type))
(Refer to Fig. 3)

(a) Check the location for the hole using the included paper pattern for installation (3).
• Choose a location so that there is at least a 3 1/2" gap between the ceiling and the main unit.

(b) Temporarily attach the installation panel (1) at the temporary-securing position on the paper pattern for installation (3) and use a level to make sure the drain hose is either level or tilted slightly downward.

(c) Secure the installation panel (1) to the wall using either screws or bolts.
• If using the attachment screws for the installation panel (2), attach using at least 4 screws on either side (for a total of 9 screws) of the recommended installation cleat position on the included paper pattern for installation (3).
• If using bolts, attach using a M8 - M10 bolt or equivalent (for a total of 2 bolts) on either side.
• If dealing with concrete, use commercially available foundation bolts (M8 - M10 or equivalent).

(3) If using the left, bottom-left, or bottom-right positions for the piping, cut out the through-hole for the piping in the front grill. (Refer to Fig. 4)

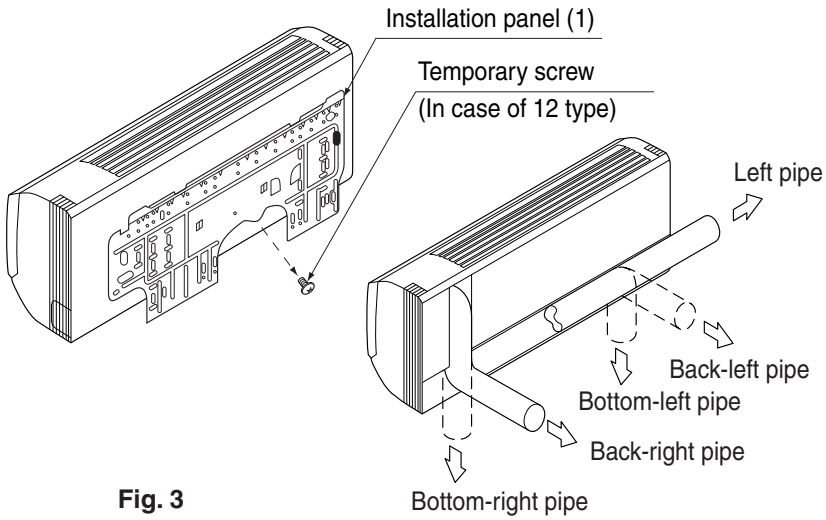

Fig. 3

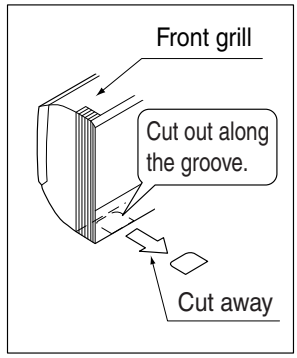

Fig. 4

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(4) Remove the front panel and the service lid. (Refer to Fig. 5)

< How to remove the front panel and service lid >

(1) Open the front panel to the point where it stops.

(2) Push the axes on either side of the front panel towards the center of the main unit and remove. (You can also remove it by sliding the front panel either to the left or right and pulling it forward.)

(3) Remove the screw from the service lid and pull the handle forward.

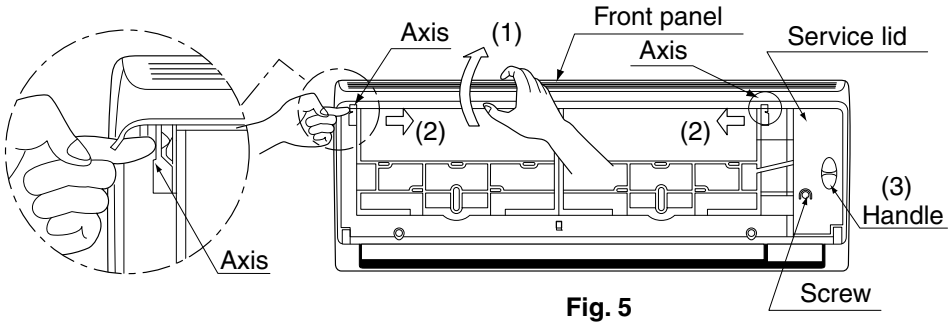

Fig. 5

(5) Point the pipe in the direction it will be passed out.

For bottom-right and back-right piping (Refer to Fig. 6)

• Wrap the drain hose and the refrigerant piping together with the insulating tape (4) so that the drain hose is below the refrigerant piping.

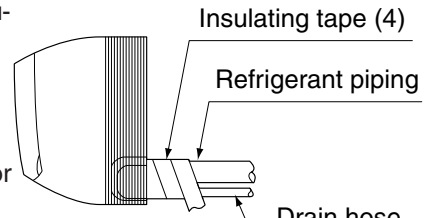

Fig. 6

For left, bottom-left, and back-left piping

• Remove the front grill. **(Refer to Fig. 7)**

< How to remove the front grill >

Remove the front grill as described below when securing the indoor unit with screws or when attaching Optional Accessories (wireless remote controller, adapter PC board, etc.).

(1) Remove the front panel.

(2) Remove the screws (3 places) securing the front grill.

(3) Remove the tabs (3 places) securing the front grill by pushing them in the direction of the arrows.

(4) Making sure not to catch the horizontal flaps, remove the front grill by pulling in the direction of the arrow.

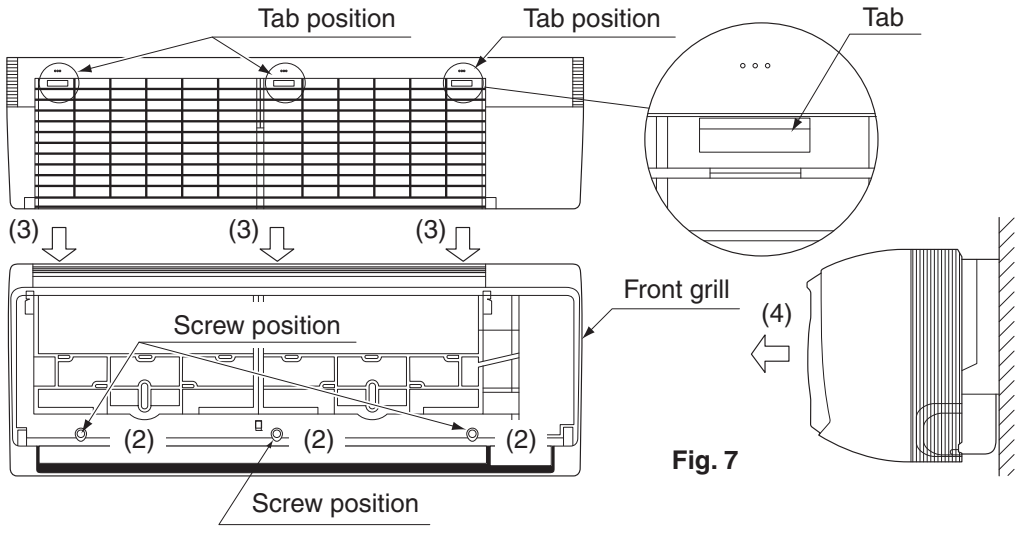

Fig. 7

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- Remove the drain plug, the insulation tube, and the drain hose from the drain pan and replace. **(Refer to Fig. 8)**
- Connect the local refrigerant piping ahead of time, matching it to the liquid pipe and gas pipe marks engraved on the installation panel (accessory) (1).

< Replacing the drain hose and drain plug >

(1) Remove the drain plug and insulation tube.
(2) Remove the drain hose and replace onto the left side.
(3) Replace the drain plug and the insulation tube onto the right side.

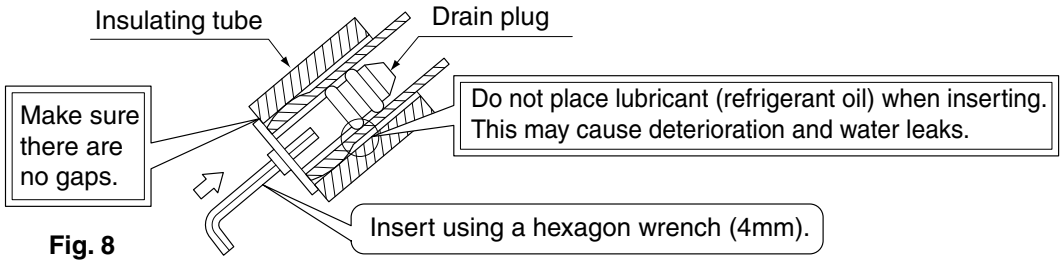
Insulating tube
Drain plug
Make sure there are no gaps.
Do not place lubricant (refrigerant oil) when inserting. This may cause deterioration and water leaks.
Insert using a hexagon wrench (4mm).

Fig. 8

(6) Hook the indoor unit onto the installation panel. (Refer to Fig. 9)

- Placing buffering material between the wall and the indoor unit at this time will make work easier.

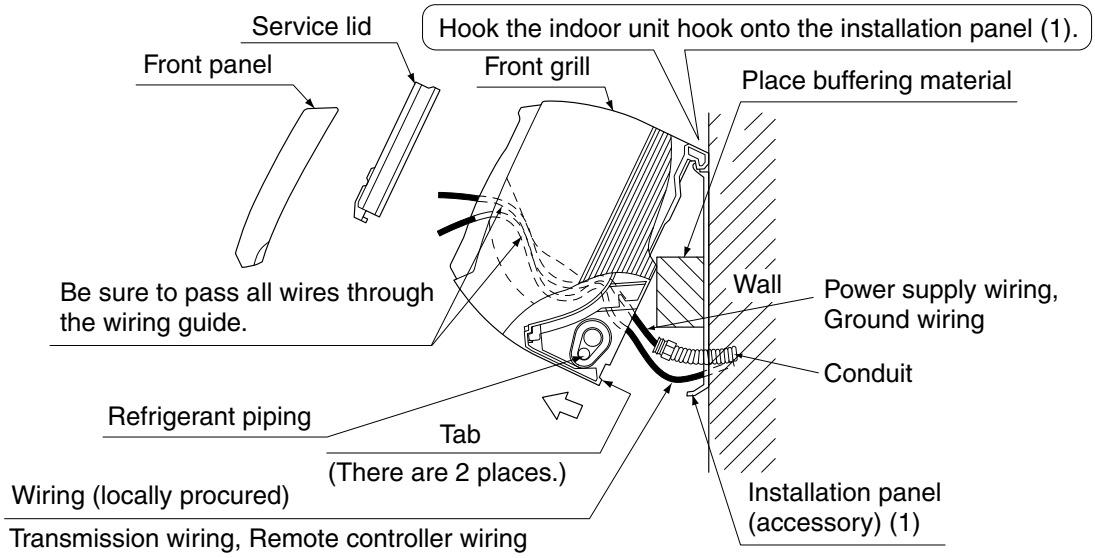

Fig. 9

For bottom-right and back-right piping

- Pass the drain hose and the refrigerant piping to the wall.

(7) Pass power supply wiring and ground wiring threaded through conduit (For connecting the conduit to the unit, see "8-1 HOW TO CONNECT WIRINGS"), and remote controller wiring through the wiring guide in through the back of the indoor unit and to the front.

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(8) Connect the piping. (See "5.REFRIGERANT PIPING WORK" and Fig. 10)

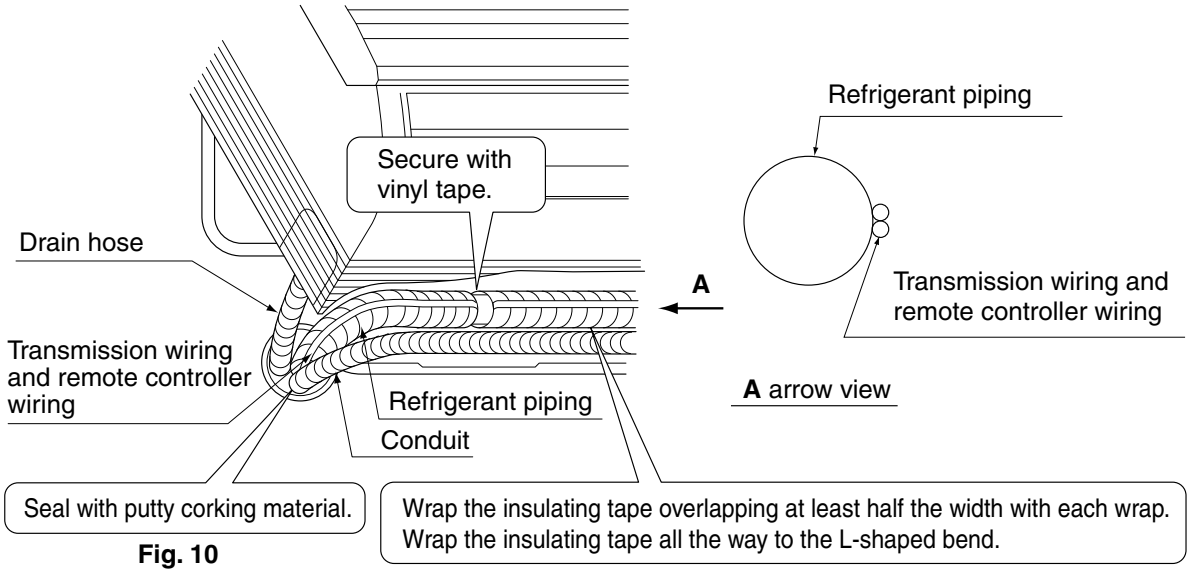
Refrigerant piping
Secure with vinyl tape.
Drain hose
A
Transmission wiring and remote controller wiring
Transmission wiring and remote controller wiring
Refrigerant piping
Conduit
A arrow view
Seal with putty corking material.
Wrap the insulating tape overlapping at least half the width with each wrap.
Wrap the insulating tape all the way to the L-shaped bend.

Fig. 10

- Seal the piping through-hole with putty corking material.

(9) Push on both bottom edges of the indoor unit using both hands and hook the tab on the back of the indoor unit onto the installation panel (1). (Refer to Fig. 9)

- At this time remove the buffering material placed in step (6).
- Make sure power supply wiring, transmission wiring, ground wiring and remote controller wiring are not caught inside the indoor unit.

■ **When screwing in the indoor unit**

- Remove the front grill. **(Refer to Fig. 7)**
- Secure the indoor unit to the installation panel (1) with the securing screws (6). **(Refer to Fig. 11)**

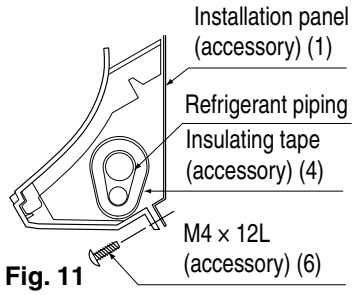

Fig. 11

5. REFRIGERANT PIPING WORK

〈**For refrigerant piping of outdoor units, see the installation manual attached to the outdoor unit.**〉
〈**Execute heat insulation work completely on both sides of the gas piping and the liquid piping. Otherwise, a water leakage can result sometimes.**〉
(When using a heat pump, the temperature of the gas piping can reach up to approximately 250°F, so use insulation which is sufficiently resistant.)
〈**Also, in cases where the temperature and humidity of the refrigerant piping sections might exceed 86ºF or RH80 %, reinforce the refrigerant insulation. (13/16" or thicker) Condensation may form on the surface of the insulating material.**〉
〈**Before refrigerant piping work, check which type of refrigerant is used. Proper operation is not possible if the types of refrigerant are not the same.**〉

⚠ DANGER

- Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could result in severe injury or death.

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NOTE

- Use a pipe cutter and flare suitable for the type of refrigerant.
- To prevent dust, moisture or other foreign matter from infiltrating the tube, either pinch the end or cover it with tape.
- Do not allow anything other than the designated refrigerant to get mixed into the refrigerant circuit, such as air, etc.
- If any refrigerant gas leaks while working on the unit, ventilate the room thoroughly right away.

- The outdoor unit is charged with refrigerant.
- Use copper alloy seamless pipes.
- Be sure to use both a spanner and torque wrench together, as shown in the drawing, when connecting or disconnecting pipes to/from the unit. **(Refer to Fig. 12)**
- Refer to “Table 1” for the dimensions of flare.
- When connecting the flare nut, coat the flare section with ester oil or ether oil, rotate three or four times first, then screw in. **(Refer to Fig. 13)**

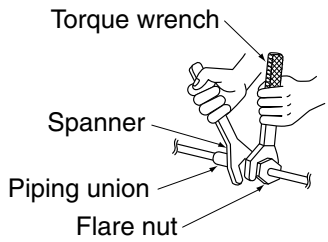


Fig. 12

CAUTION

- Over-tightening may cause the flare nuts to crack or the refrigerant to leak.
- Use the flare nut included with the unit.

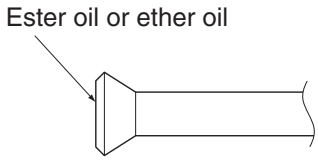
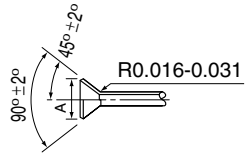


Fig. 13

- Refer to Table 1 for tightening torque.

Table 1

Pipe size	Tightening torque (ft-lbf)	Flare dimensions A (in.)	Flare shape (in.)
ϕ 3/8”	24.1 – 29.4	0.504 – 0.520	
ϕ 5/8”	45.6 – 55.6	0.760 – 0.776	

Not recommended but in case of emergency

You must use a torque wrench but if you are obliged to install the unit without a torque wrench, you may follow the installation method mentioned below.

After the work is finished, make sure to check that there is no gas leak.

When you keep on tightening the flare nut with a spanner, there is a point where the tightening torque suddenly increases. From that position, further tighten the flare nut the angle shown below:

Table 2

Pipe size (in.)	Further tightening angle	Recommended arm length of tool (in.)
ϕ 3/8”	60 to 90 degrees	Approx. 7 7/8”
ϕ 5/8”	30 to 60 degrees	Approx. 11 13/16”

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⚠ CAUTION

- CAUTION TO BE TAKEN WHEN BRAZING REFRIGERANT PIPING
  "Do not use flux when brazing refrigerant piping. Therefore, use the phosphor copper brazing filter metal (BCuP) which does not require flux."
  (Flux has an extremely negative effect on refrigerant piping systems. For instance, if chlorine based flux is used, it will cause pipe corrosion. If the flux contains fluorine, it will damage the refrigerant oil.)

- When brazing the refrigerant piping, only begin brazing after having carried out nitrogen substitution (NOTE 1) or while inserting nitrogen into the refrigerant piping (NOTE 2). Once this is done, connect the indoor unit with a flared or a flanged connection.

⚠ DANGER

- Use of oxygen may cause an explosion resulting in serious injury or death. Only use nitrogen gas.

⚠ NOTE

1. Refer to the "Manual for Multi Installation for Buildings" for directions on how to carry out nitrogen substitution. (Inquire with your dealer.)
2. Nitrogen should be set to 2.9 psi with a pressure-reducing valve if brazing while inserting nitrogen into the piping. **(Refer to Fig. 14)**

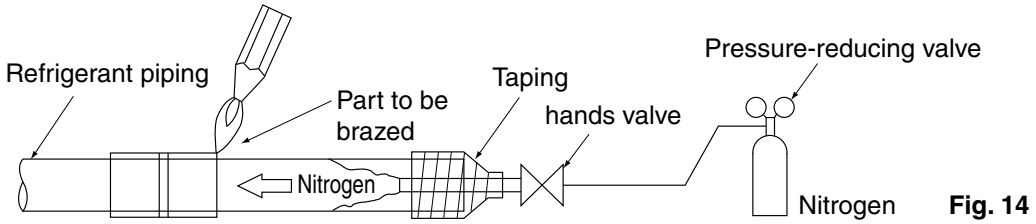

Fig. 14

- After checking for gas leaks, be sure to insulate the pipe connections using the supplementary piping insulation tubing and insulating tape (4). The insulating tape (4) should be wrapped from the L-shaped bend all the way to the end inside the unit. **(Refer to Fig. 15)**

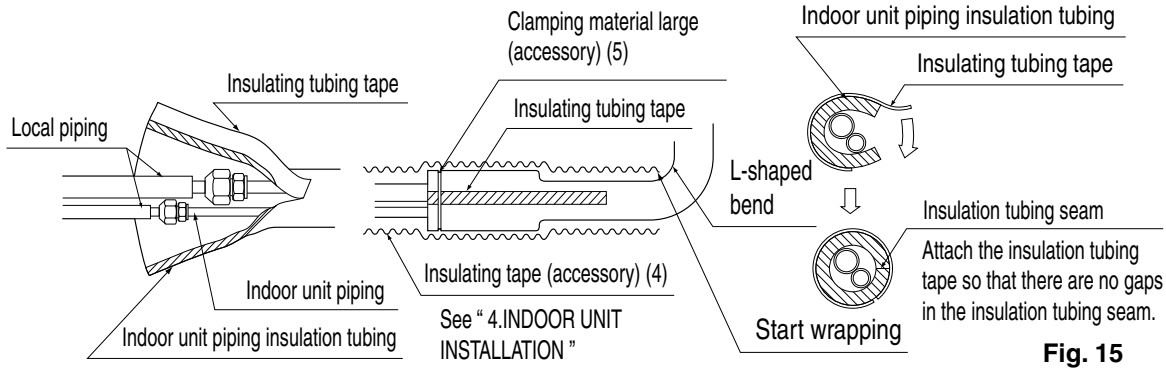
Clamping material large (accessory) (5)
Indoor unit piping insulation tubing
Insulating tubing tape
Insulating tubing tape
Insulating tubing tape
Local piping
L-shaped bend
Insulation tubing seam
Attach the insulation tubing tape so that there are no gaps in the insulation tubing seam.
Insulating tape (accessory) (4)
Indoor unit piping
Indoor unit piping insulation tubing
See " 4.INDOOR UNIT INSTALLATION "
Start wrapping

Fig. 15

⚠ CAUTION

- Be sure to insulate any field piping all the way to the piping connection inside the unit. Any exposed piping may cause condensate or burns if touched.

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6. DRAIN PIPING WORK

(1) Install the drain piping. (Refer to Fig. 16)

- The drain pipe should be short with a downward slope and should prevent air pockets from forming.
- Watch out for the points in the figure 16 when performing drain work.

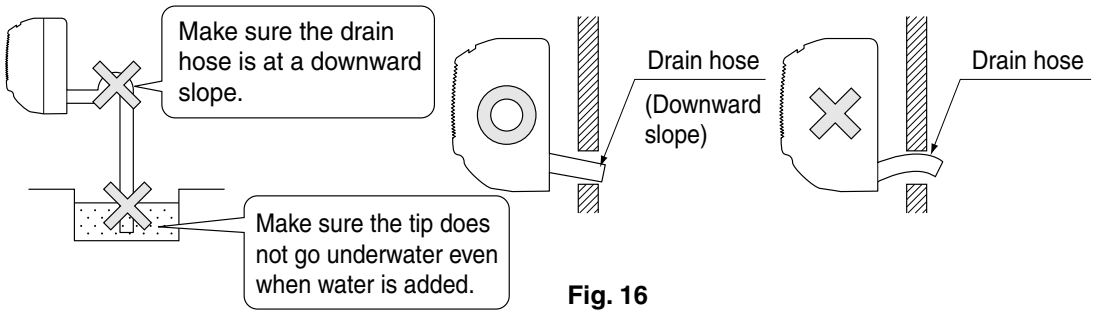
Make sure the drain hose is at a downward slope.
Drain hose
(Downward slope)
Drain hose
Make sure the tip does not go underwater even when water is added.

Fig. 16

- When extending the drain hose, use a commercially available drain extension hose, and be sure to insulate the extended section of the drain hose which is indoors. **(Refer to Fig. 17)**

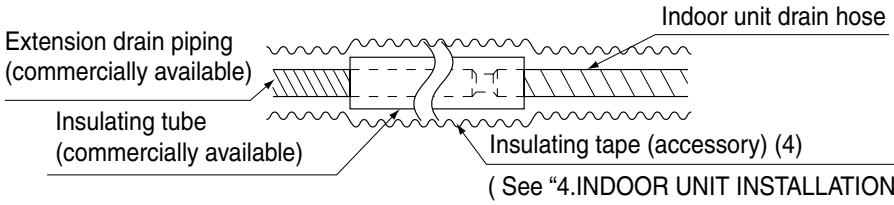

Fig. 17

- Make sure the diameter of the extension drain piping is the same as the indoor unit drain hose (hard vinyl chloride, I.D. 9/16”) or bigger.
- In case of converging multiple drain pipes, install them referring to Fig. 18.
- Select diameter of drain piping which adapts to the capacity of the unit connected.

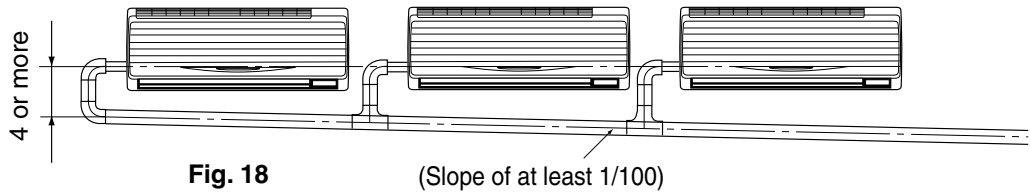

Fig. 18

(2) Make sure the drain works properly.

- After drain work is complete, perform a drain check by opening the front panel, **removing the air filter**, pouring water into the drain pan, and making sure water flows smoothly out of the drain hose. **(Refer to Fig. 19)**

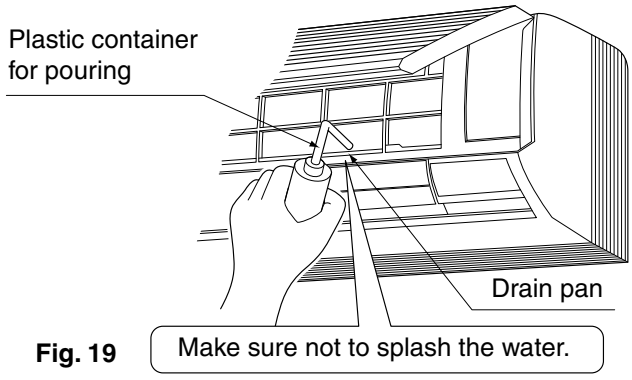

Fig. 19

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⚠ CAUTION

- Drain piping connections
  Do not connect the drain piping directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipes and corrode the heat exchanger.
  Keep in mind that it will become the cause of getting drain pipe blocked if water collects on drain pipe.

7. ELECTRIC WIRING WORK

7-1 GENERAL INSTRUCTIONS

- All field supplied parts and materials and electric works must conform to local codes.
- Use copper wire only.
- For electric wiring work, refer to also “WIRING DIAGRAM” attached to the unit.
- For remote controller wiring details, refer to the installation manual attached to the remote controller.
- All wiring must be performed by an authorized electrician.
- This system consists of multiple indoor units. Mark each indoor unit as unit A, unit B..., and be sure the terminal block wiring to the outdoor unit and BS unit is properly matched. If wiring and piping between the outdoor unit and indoor unit are mismatched, the system may cause a malfunction.
- A circuit breaker capable of shutting down power supply to the entire system must be installed.
- Refer to the installation manual attached to the outdoor unit for the size of power supply wiring connected to the outdoor unit, the capacity of the circuit breaker and switch, and wiring instructions.
- Be sure to ground the air conditioner.

⚠ DANGER

- Do not ground units to water pipes, telephone wires or lightning rods because incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.

7-2 ELECTRICAL CHARACTERISTICS

Units				Power supply		Fan motor	
Model	Hz	Volts	Voltage range	MCA	MFA	W	FLA
FAQ18PVJU	60	208-230	Max. 253 Min. 187	0.4	15	43	0.3
FAQ24PVJU				0.6	15	43	0.5

MCA: Min. Circuit Amps (A); MFA: Max. Fuse Amps (A)
W: Fan Motor Rated Output (W); FLA: Full Load Amps (A)

7-3 SPECIFICATIONS FOR FIELD SUPPLIED FUSES AND WIRE

Model	Power supply wiring		Remote controller wiring Transmission wiring	
	Field fuses ⊣⊢	Size	Wire	Size
FAQ18PVJU	15A	Size must comply with local codes.	Sheathed wire (2 wire)	AWG18-16
FAQ24PVJU				

- Allowable length of transmission wiring and remote controller wiring are as follows.
  (1) Outdoor unit - Indoor unit:Max.3280ft. (Total wiring length: 6560ft.)
  (2) Indoor unit - Remote controller:Max.1640ft.
  Insulated thickness: 1/16” or more.

NOTE: Either a fuse or a breaker is acceptable.

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8. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER

8-1 HOW TO CONNECT WIRINGS

• Conduit for power supply wiring
Unscrew and remove the conduit mounting plate from the electric parts box. **(Refer to Fig. 20)**
Fix a conduit to the plate with a lock nut and reattach them at original position.

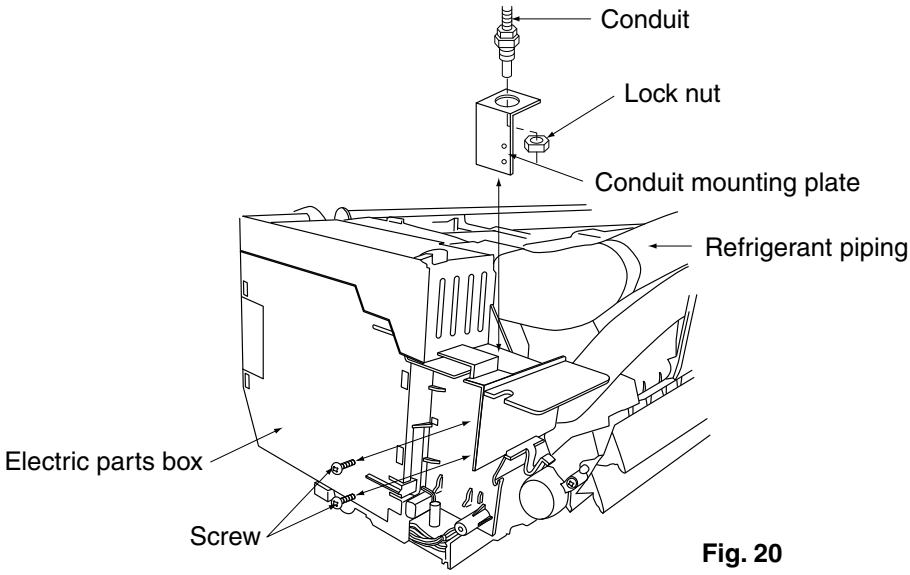

Fig. 20

• Power supply wiring and ground wiring
Unscrew and remove the service lid.
Thread the power supply wiring and ground wiring through the included insulating tube (short) (7) and secure them with the included clamp (small) (5). **(Refer to Fig. 21)**
Connect the power supply wiring and ground wiring to the power supply terminal block (3P).
When doing this, firmly secure using the included clamp (small) (5) according to the figure.
(Refer to Fig. 22)

• Transmission wiring and remote controller wiring
Unscrew and remove the service lid.
Thread the remote controller wiring and transmission wiring through the included insulating tube (long) (7) and secure them with the included clamp (small) (5). **(Refer to Fig. 21)**
Connect the remote controller wiring and the transmission wiring to the terminal block (6P).
When doing this, tie the remote controller wiring and the transmission wiring using the included clamp (small) (5) and then firmly secure using the included clamp (small) (5) according to the figure. **(Refer to Fig. 22)**

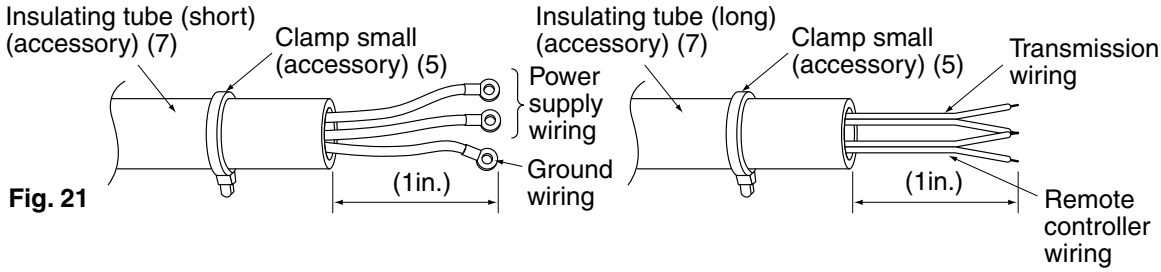

Fig. 21

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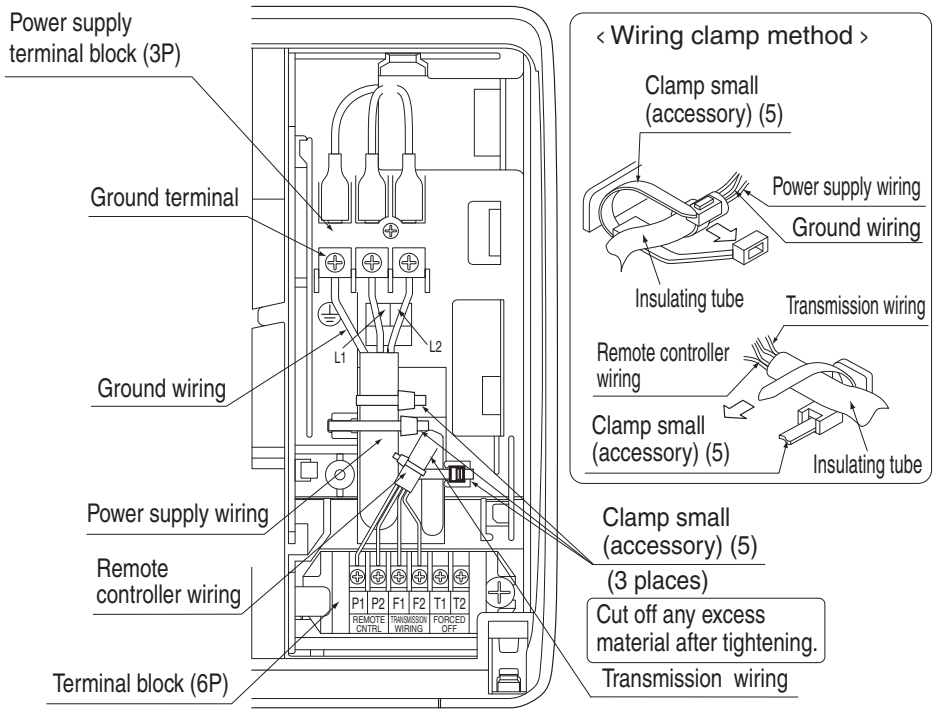

Fig. 22

⚠ WARNING

- Never connect power supply wiring to the terminal block for remote controller wiring as this could damage the entire system.
- Use only specified wire and connect wires to the terminal tightly. Be careful wires do not place external stress on terminals. Keep wires in neat order so as not to obstruct other equipment. Make sure that the electric box lid fits tightly. Incomplete connections could result in overheating and, in worse case, result in electric shock or fire.
- To avoid a short circuit in the electric parts box, be sure to apply sealing material or putty (not included) to the wiring hole to prevent the infiltration of water as well as insects or other small creatures. Otherwise a short-circuit may occur inside the electric parts box.

⚠ CAUTION

- When clamping the wirings, be sure no tension is applied to the wire connections by using the included clamp. Also, when wiring, make sure the lid on the electric parts box fits snugly by arranging the wirings neatly and attaching the service lid firmly. When attaching the service lid, make sure no wirings get caught in the edges. Pass wiring through holes to prevent damage to them.
- Make sure the remote controller wiring and transmission wiring between the units, and other electrical wiring do not pass through the same locations outside the unit, separating them by at least 5”, otherwise electrical noise (external static) could cause incorrect operation or breakage.
  Use only specified wire and tightly connect wires to terminals. Be careful wires do not place external stress on terminals. Keep wiring in neat order and so as not to obstruct other equipment such as popping open the service cover. Make sure the cover closes tight. Incomplete connections could result in overheating, and in worse case, electric shock or fire.

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[PRECAUTIONS]

1. Use round crimp-style terminals for connecting wires to the power supply terminal block. **(Refer to Fig. 23)**

If unavailable, observe the following points when wiring.
- Do not connect wires of different gauge to the same power supply terminal. (Looseness in the connection may cause overheating.)
- Use the specified electric wire. Connect the wire securely to the terminal. Lock the wire down without applying excessive force to the terminal. (Tightening torque: 0.97ft.lbf ±10 %)

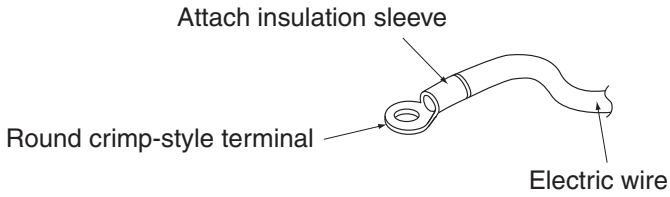


Fig. 23

2. Tightening torque for the terminal screws.
- Use the correct screwdriver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
- If the terminal screws are tightened too hard, screws might be damaged.
- Refer to the table below for the tightening torque of the terminal screws.

Terminal	Size	Tightening torque (ft-lbf)
Remote controller, Transmission wiring and Forced off terminal block (6P)	M3.5	0.58 – 0.72
Power supply and Ground terminal block (3P)	M4	0.87 – 1.06

3. Do not connect wires of different gauge to the same ground terminal. Looseness in the connection may lessen protection.

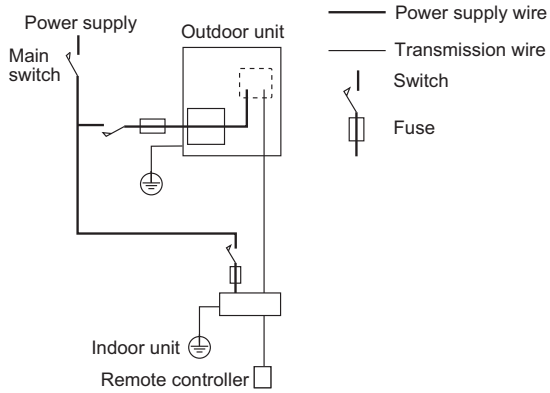
4. Keep transmission wiring at least 5” away from power supply wiring. The equipment may malfunction if subjected to electrical (external) noise.

5. For remote controller wiring, refer to the “INSTALLATION MANUAL OF REMOTE CONTROLLER” attached to the remote controller.

8-2 WIRING EXAMPLE

- Fit the power supply wire of each unit with a switch and fuse as shown in the drawing.

COMPLETE SYSTEM EXAMPLE



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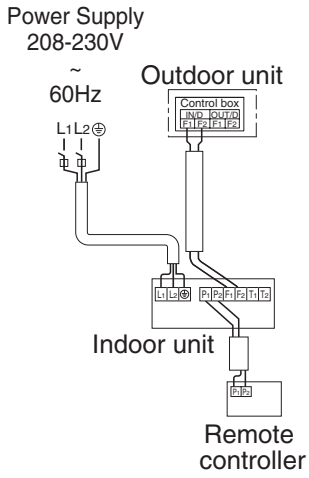
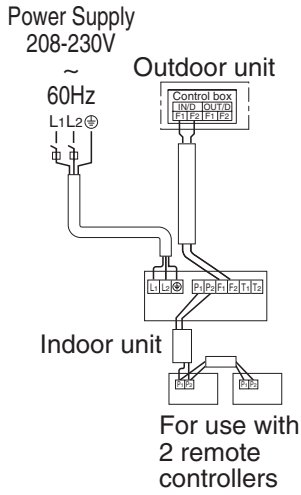
1. When using 1 remote controller for 1 indoor unit. (Normal operation)



2. When using 2 remote controllers for 1 indoor unit.



NOTE

1. A single switch can be used to supply power to units on the same system. However, branch switches and branch circuit breakers must be selected carefully.
2. Do not ground the equipment on gas pipes, water pipes or lightning rods, or crossground with telephones. Improper grounding could result in electric shock.

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8-3 CONTROL BY 2 REMOTE CONTROLLERS (CONTROLLING 1 INDOOR UNIT BY 2 REMOTE CONTROLLERS)

• When using 2 remote controllers, one must be set to “MAIN” and the other to “SUB”.

MAIN/SUB CHANGEOVER

(1) Insert a ⊖ screwdriver into the recess between the upper and lower part of remote controller, and working from the 2 positions, pry off the upper part. The remote controller PC board is attached to the upper part of the remote controller. **(Refer to Fig. 28)**

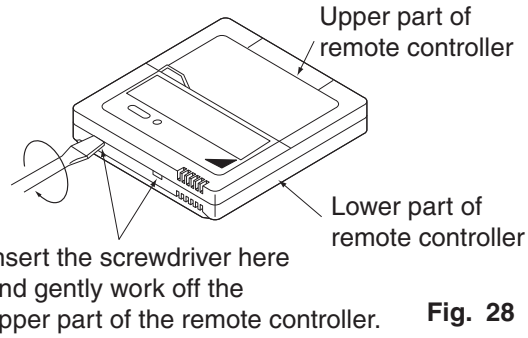
Upper part of remote controller
Lower part of remote controller
Insert the screwdriver here and gently work off the upper part of the remote controller.

Fig. 28

(2) Turn the **MAIN/SUB changeover** switch on one of the two remote controller PC boards to “S”. (Leave the switch of the other remote controller set to “M”.) **(Refer to Fig. 29)**

Wiring Method (See “7.ELECTRIC WIRING WORK”)

(3) Remove the service lid.

(4) Add remote control 2 (slave) to the terminal block (6P) for remote controller (P1, P2) in the electric parts box.
(There is no polarity.) (Refer to Fig. 26 and section 7-3 for the wiring size.)

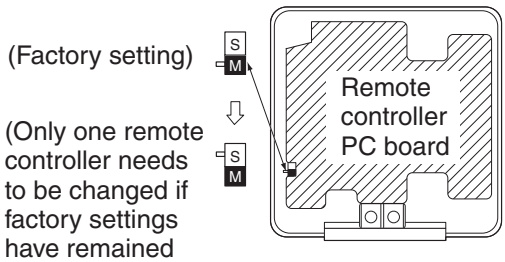

Fig. 29

8-4 COMPUTERISED CONTROL (FORCED OFF AND ON/OFF OPERATION)

(1) Wire specifications and how to perform wiring
• Connect the input from outside to terminals T1 and T2 of the terminal block (6P).

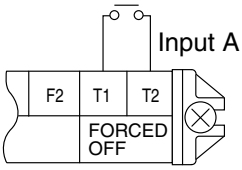

Fig. 30

Wire specification	Sheathed vinyl cord or cable (2 wire)
Gauge	AWG18-16
Length	Max. 328 ft.
External terminal	Contact that can ensure the minimum applicable load of 15V DC, 10 mA.

(2) Actuation
• The following table explains FORCED OFF and ON/OFF OPERATIONS in response to Input A.

FORCED OFF	ON/OFF OPERATION
Input “ON” stops operation (impossible by remote controllers).	Input OFF → ON turns ON unit.
Input OFF enables control by remote controller.	Input ON → OFF turns OFF unit.

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(3) How to select FORCED OFF and ON/OFF OPERATION
- Turn the power on and then use the remote controller to select operation.
- Set the remote controller to the field set mode. For details, refer to the “HOW TO SET IN THE FIELD”, in the remote controller manual.
- When in the field set mode, select mode No. 12, then set the first code (switch) No. to “1”. Then set second code (position) No. to “01” for FORCED OFF and “02” for ON/OFF OPERATION.
  (FORCED OFF at factory set) **(Refer to Fig. 31)**

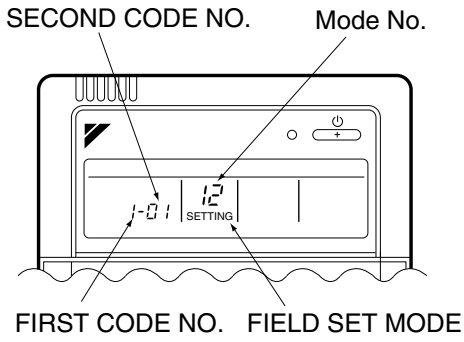

Fig. 31

8-5 CENTRALIZED CONTROL
- For centralized control, it is necessary to designate the group No. For details, refer to the manual of each optional controllers for centralized control.

9. FIELD SETTINGS

(1) Make sure the service lids are closed on the indoor and outdoor units.
(2) Field settings must be made from the remote controller in accordance with installation conditions.
- Settings can be made by changing the “Mode No”, “FIRST CODE NO.” and “SECOND CODE NO.”. Refer to the installation manual attached to the remote controller.
- The “Field Settings” included with the remote controller lists the order of the settings and method of operation.
  *Setting is made in all units in a group. To set for individual indoor units or to check the setting, use the mode Nos. (with “2” in upper digit) in parentheses ( ).

9-1 SETTING AIR FILTER SIGN
- Remote controllers are equipped with liquid crystal display air filter signs to display the time to clean air filters.
- Change the SECOND CODE NO. according to Table 3 depending on the amount of dirt or dust in the room. (SECOND CODE NO. is factory set to “01” for air filter contamination-light)

Table 3

Setting	Spacing time of display air filter sign	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Air filter contamination-light	Approx. 200 hrs	10 (20)	0	01
Air filter contamination-heavy	Approx. 100 hrs			02

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9-2 SETTING AIR FLOWRATE INCREASE MODE

• It is possible to raise set air flow (HIGH and LOW) from the field. Change the SECOND CODE NO. as shown in Table 4 to suit your needs.
(SECOND CODE NO. is factory set to “01” for Standard.)

Table 4

Setting	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Standard	13 (23)	0	01
A little increase			02
Increase			03

〈**When using wireless remote controllers**〉

• When using wireless remote controllers, wireless remote controller address setting is necessary. Refer to the installation manual attached to the wireless remote controller for setting instructions.

10. TEST OPERATION

Make sure the service lids are closed on the indoor and outdoor units.
Refer to the installation manual of the outdoor unit.

• The operation lamp of the remote controller will flash when a malfunction occurs. Check the malfunction code on the liquid crystal display to identify the point of trouble. An explanation of malfunction codes and the corresponding trouble is provided in the installation manual of the outdoor unit.
If any of the items in Table 5 are displayed, there may be a problem with the wiring or power, so check the wiring again.

Table 5

Remote controller display	Content
“ ” (under centralized control) is lit up	• There is a short circuit at the FORCED OFF terminals (T1, T2).
“U4” is lit up “UH” is lit up	• The power on the outdoor unit is off. • The outdoor unit has not been wired for power supply. • Incorrect wiring for the transmission wiring and/or FORCED OFF wiring. • The transmission wiring is cut.
No display	• The power on the indoor unit is off. • The indoor unit has not been wired for power supply. • Incorrect wiring for the remote controller wiring, the transmission wiring, and/or the FORCED OFF wiring. • The remote controller wiring is cut.

• If “U3” is lit up, the malfunction code shows the test operation has not been performed yet.

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15. Installation of outdoor unit

15.1 RZR18PVJU / RZR24PVJU / RZR30PVJU / RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU

DAIKIN

SPLIT SYSTEM Air Conditioners Installation manual

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1. SAFETY CONSIDERATIONS

Read these "SAFETY CONSIDERATIONS for Installation" carefully before installing air conditioning equipment. After completing the installation, make sure that the unit operates properly during the startup operation.
Instruct the customer on how to operate and maintain the unit. Inform customers that they should store this Installation Manual with the Operation Manual for future reference.
Always use a licensed installer or contractor to install this product. Improper installation can result in water or refrigerant leakage, electrical shock, fire, or explosion.
Meanings of **DANGER**, **WARNING**, **CAUTION**, and **NOTE** Symbols:

⚠ **DANGER**..... Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING**..... Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION**..... Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

⚠ **NOTE**..... Indicates situations that may result in equipment or property-damage accidents only.

⚠ DANGER

- **Refrigerant gas is heavier than air and replaces oxygen. A massive leak can lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.**
- **Do not ground units to water pipes, gas pipes, telephone wires, or lightning rods as incomplete grounding can cause a severe shock hazard resulting in severe injury or death. Additionally, grounding to gas pipes could cause a gas leak and potential explosion causing severe injury or death.**
- **If refrigerant gas leaks during installation, ventilate the area immediately. Refrigerant gas may produce toxic gas if it comes in contact with fire. Exposure to this gas could cause severe injury or death.**
- **After completing the installation work, check that the refrigerant gas does not leak throughout the system.**
- **Do not install unit in an area where flammable materials are present due to risk of explosions that can cause serious injury or death.**
- **Safely dispose all packing and transportation materials in accordance with federal/state/local laws or ordinances. Packing materials such as nails and other metal or wood parts, including plastic packing materials used for transportation may cause injuries or death by suffocation.**

⚠ WARNING

- **Only qualified personnel must carry out the installation work. Installation must be done in accordance with this installation manual. Improper installation may result in water leakage, electric shock, or fire.**
- **When installing the unit in a small room, take measures to keep the refrigerant concentration from exceeding allowable safety limits. Excessive refrigerant leaks, in the event of an accident in a closed ambient space, can lead to oxygen deficiency.**
- **Use only specified accessories and parts for installation work. Failure to use specified parts may result in water leakage, electric shocks, fire, or the unit falling.**
- **Install the air conditioner on a foundation strong enough that it can withstand the weight of the unit. A foundation of insufficient strength may result in the unit falling and causing injuries.**
- **Take into account strong winds, typhoons, or earthquakes when installing. Improper installation may result in the unit falling and causing accidents.**
- **Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local, state, and national regulations. An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.**
- **Make sure that all wiring is secured, that specified wires are used, and that no external forces act on the terminal connections or wires. Improper connections or installation may result in fire.**

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- When wiring, position the wires so that the control box cover can be securely fastened. Improper positioning of the control box cover may result in electric shocks, fire, or the terminals overheating.
- Before touching electrical parts, turn off the unit.
- Be sure to install a ground fault circuit interrupter if one is not already available. This helps prevent electrical shocks or fire.
- Securely fasten the outdoor unit terminal cover (panel). If the terminal cover/panel is not installed properly, dust or water may enter the outdoor unit causing fire or electric shock.
- When installing or relocating the system, keep the refrigerant circuit free from substances other than the specified refrigerant (R410A) such as air. Any presence of air or other foreign substance in the refrigerant circuit can cause an abnormal pressure rise or rupture, resulting in injury.
- Do not change the setting of the protection devices. If the pressure switch, thermal switch, or other protection device is shorted and operated forcibly, or parts other than those specified by Daikin are used, fire or explosion may occur.

⚠ CAUTION

- Do not touch the switch with wet fingers. Touching a switch with wet fingers can cause electric shock.
- Do not allow children to play on or around the unit to prevent injury.
- Do not touch the refrigerant pipes during and immediately after operation as the refrigerant pipes may be hot or cold, depending on the condition of the refrigerant flowing through the refrigerant piping, compressor, and other refrigerant cycle parts. Your hands may suffer burns or frostbite if you touch the refrigerant pipes. To avoid injury, give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.
- Heat exchanger fins are sharp enough to cut.
  To avoid injury wear glove or cover the fins when working around them.
- Install drain piping to proper drainage. Improper drain piping may result in water leakage and property damage.
- Insulate piping to prevent condensation.
- Be careful when transporting the product.
- Do not turn off the power immediately after stopping operation. Always wait for at least 5 minutes before turning off the power. Otherwise, water leakage may occur.
- Do not use a charging cylinder. Using a charging cylinder may cause the refrigerant to deteriorate.
- Refrigerant R410A in the system must be kept clean, dry, and tight.
  (a) Clean and Dry -- Foreign materials (including mineral oils such as SUNISO oil or moisture) should be prevented from getting into the system.
  (b) Tight -- R410A does not contain any chlorine, does not destroy the ozone layer, and does not reduce the earth's protection again harmful ultraviolet radiation. R410A can contribute to the greenhouse effect if it is released. Therefore take proper measures to check for the tightness of the refrigerant piping installation. Read the chapter Refrigerant Piping Work and follow the procedures.
- Since R410A is a blend, the required additional refrigerant must be charged in its liquid state. If the refrigerant is charged in a state of gas, its composition can change and the system will not work properly.
- The indoor unit is for R410A. See the catalog for indoor models that can be connected. Normal operation is not possible when connected to other units.
- Remote controller (wireless kit) transmitting distance can be shorter than expected in rooms with electronic fluorescent lamps (inverter or rapid start types). Install the indoor unit far away from fluorescent lamps as much as possible.
- Indoor units are for indoor installation only. Outdoor units can be installed either outdoors or indoors.
- Do not install the air conditioner in the following locations:
  (a) Where a mineral oil mist or oil spray or vapor is produced, for example, in a kitchen.
  Plastic parts may deteriorate and fall off or result in water leakage.
  (b) Where corrosive gas, such as sulfurous acid gas, is produced.
  Corroding copper pipes or soldered parts may result in refrigerant leakage.
  (c) Near machinery emitting electromagnetic waves. Electromagnetic waves may disturb the operation of the control system and cause the unit to malfunction.
  (d) Where flammable gas may leak, where there is carbon fiber, or ignitable dust suspension in the air, or where volatile flammables such as thinner or gasoline are handled. Operating the unit in such conditions can cause a fire.
- Take adequate measures to prevent the outdoor unit from being used as a shelter by small animals. Small animals making contact with electrical parts can cause malfunctions, smoke, or fire. Instruct the customer to keep the area around the unit clean.

⚠ NOTE

- Install the power supply and control wires for the indoor and outdoor units at least 3.5 feet away from televisions or radios to prevent image interference or noise. Depending on the radio waves, a distance of 3.5 feet may not be sufficient to eliminate the noise.
- Dismantling the unit, treatment of the refrigerant, oil and additional parts must be done in accordance with the relevant local, state, and national regulations.
- Do not use the following tools that are used with conventional refrigerants: gauge manifold, charge hose, gas leak detector, reverse flow check valve, refrigerant charge base, vacuum gauge, or refrigerant recovery equipment.
- If the conventional refrigerant and refrigeration oil are mixed in R410A, the refrigerant may deteriorate.

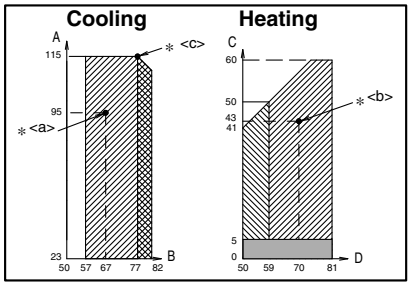
- **This air conditioner is an appliance that should not be accessible to the general public.**
- **The wall thickness of field-installed pipes should be selected in accordance with the relevant local, state, and national regulations.**

〈**Safety Precaution**〉
The PCI Data Station is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

2. INTRODUCTION

2-1 Standard operation limit

The figures below assume following operating conditions for indoor and outdoor units:
Equivalent pipe length.....25 ft.
Level difference.....0 ft.



A Outdoor temperature (°FDB)
B Indoor temperature (°FWB)
C Outdoor temperature (°FWB)
D Indoor temperature (°FDB)
Range for continuous operation
Range for pull down operation
Range for warming up operation
Range for operation

2-2 Technical specifications

(∗<a> and ∗<b> in the table indicate the operating condition (shown in the left figure).)

Model		RZQ18PVJU RZR18PVJU	RZQ24PVJU RZR24PVJU	RZQ30PVJU RZR30PVJU	Precaution
Refrigerant		R410A			
Power		208/230V 60Hz			
[FAQ] Wall mounted					
Cooling (MBh)		18.0	24.0	–	∗<a>
Heating (MBh) (RZQ only)		20.0	26.0	–	∗<b>
[FCQ] Ceiling mounted					
Cooling (MBh)		18.0	24.0	30.0	∗<a>
Heating (MBh) (RZQ only)		20.0	27.0	34.0	∗<b>
[FHQ] Ceiling Suspended					
Cooling (MBh)		18.0	24.0	30.0	∗<a>
Heating (MBh) (RZQ only)		20.0	27.0	34.0	∗<b>
(RZQ only)					
[FTQ] Air Handling Unit					
Cooling (MBh)		18.0	24.0	–	∗<a>
Heating (MBh)		20.0	26.0	–	∗<b>
Dimensions	(inch)	30-5/16 × 35 7/16 × 12 5/8			
H × W × D					
Weight	(lb.)	150			
Connections					
Gas	(inch)	5/8			
Liquid	(inch)	3/8			

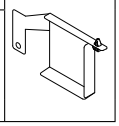
2-3 Electrical specifications

(∗<c> in the table indicate the operating condition (shown in the left figure).)

Model		RZQ18PVJU RZR18PVJU	RZQ24PVJU RZR24PVJU	RZQ30PVJU RZR30PVJU	Precaution
Power					
Phase		~			
Frequency	(Hz)	60			
Voltage	(V)	208/230			
Voltage tolerance	(%)	±10			
Max.Overcurrent Protective device	(A)	20			
Min. Circuit Amps.	(A)	16.5			∗<c>
Compressor					
Phase		3~			
Frequency	(Hz)	60			
Voltage	(V)	208/230			

2-4 Accessories

Confirm that the following accessories are supplied.

Clamp	Insulation tube				Cover (Handle)
	(Large-1)	(Large-2)	(Small-1)	(Small-2)	
					
(1 pc.)	(2 pcs.)	(1 pc.)	(2 pcs.)	(1 pc.)	

Screw	Conduit mounting plate		Others
			• Installation manual
(1 pc.)	(2 pcs.)	(2 pcs.)	

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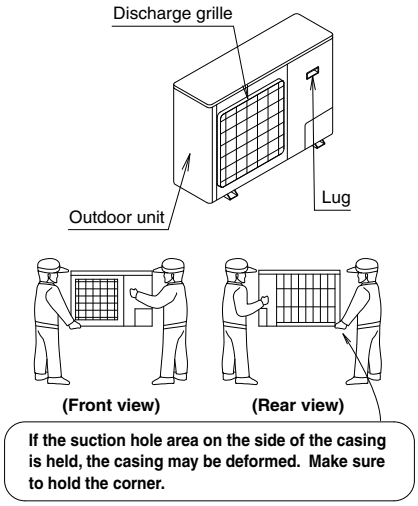
2-5 Main components

For main components and function of the main components, refer to the Engineering Data Book.

3. BEFORE INSTALLATION

〈**Bringing-in**〉

Bring in the outdoor unit slowly by holding the lugs provided on the left and right sides as shown in the figures below.
(Take care so that hands and objects do not touch the fin on the rear.)


Discharge grille
Lug
Outdoor unit
(Front view)
(Rear view)
If the suction hole area on the side of the casing is held, the casing may be deformed. Make sure to hold the corner.

◎ Make sure to use accessories and specified specification parts in the installation work.

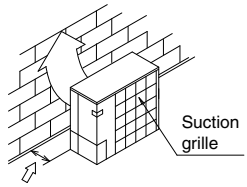
4. SELECTION OF INSTALLATION LOCATION

The refrigerant R410A itself is nontoxic, nonflammable and safe. If the refrigerant should leak however, its concentration may exceed the allowable limit depending on room size. Due to this it could be necessary to take measures against leakage. Refer to the chapter "Caution for refrigerant leaks".

(1) Select a proper location satisfying the following requirements with approval of the customer.
- Sufficient ventilation is secured.
- Adjacent houses are not annoyed.
- The foundation is strong enough to support the weight and withstand vibrations of the outdoor unit, and the location is safe and allows horizontal installation.
- The outdoor unit is exposed to rain as less as possible.
- The space for installation and servicing is secured around the outdoor unit.
- The indoor/outdoor piping length and wiring length are within the allowable range.

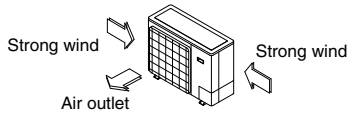
(2) When installing the outdoor unit in a location affected by strong wind, pay special attention to the following items.
- If strong wind whose velocity is 11 mph or more blows to the outdoor unit from the air outlet side, the air flow rate of the outdoor unit is reduced, the outlet air is sucked again (short-circuit), and the following effect may be caused:
  - The capacity is deteriorated.
  - The adhered frost increases during heating operation.
  - The operation is stopped by pressure rise.
- If excessive strong wind continuously blows from the air outlet side of the outdoor unit, the fan may rotate in the reverse direction at high speed, and lead to damage. Install the outdoor unit in reference to the following figures.

• Position the air outlet side toward the building wall, fence or windbreak screen.



(Secure the space for installation and servicing.)

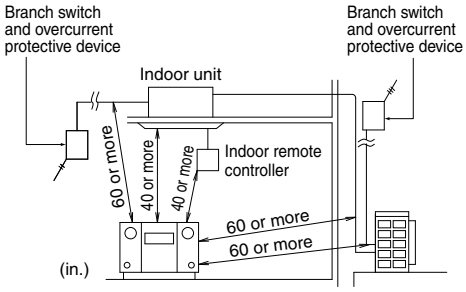
• Let the air outlet direction face be at right angles to the wind direction.



(3) When installing the outdoor unit in a location with heavy snowfall, pay special attention to the following items:
- Prepare strong foundation.
- Attach the snow hood (optional accessory).
- Remove the suction grill on the rear so that snow will not be accumulated in the rear fin.

(4) When there is a possibility of short-circuit depending on the ambient situation, use the wind direction adjusting plate (optional accessory).

(5) The inverter type air conditioner may cause noise in electric products.
When selecting an installation location, keep sufficient distance from the air conditioner units and wiring to radios, personal computers, stereos, etc. as shown in the figure below.
In areas with weak electric waves, keep a distance of 120 in. or more from the indoor remote controller, etc., put the power cables and connection cables in conduit tubes, and ground the conduit tubes.



⚠ DANGER

- Do not install unit in an area where flammable materials are present due to risk of explosion resulting in serious injury or death.
- Refrigerant is heavier than air and replaces oxygen. A massive leak could lead to oxygen depletion , especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.

Installation place (unit: inch)

〈**Cautions on continuous installation**〉

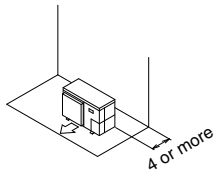
- The connection piping outlet direction in the continuous installation shown in the figures below is frontward or downward.
- When routing the piping rearward, secure space of 10 in. or more on the right side of the outdoor unit. (The unit of numeric values below is “inch”.)
- Make some space for wiring with conduit and servicing between the units.

(A) When an obstruction is present on the air inlet side

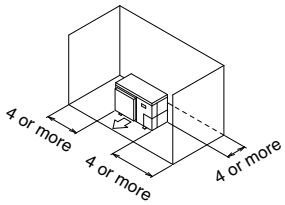
- **When the upward area is open**

(1) When one outdoor unit is installed individually

- When an obstruction is present only on the air inlet side

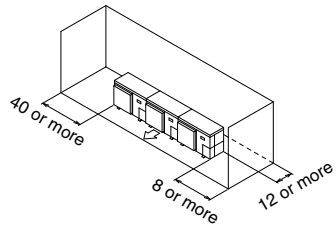


- When an obstruction is present on the both sides



(2) When two or more outdoor units are installed side by side

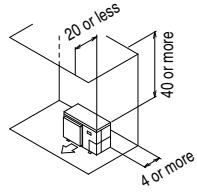
- When an obstruction is present on the both sides



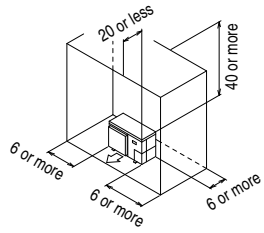
- **When an obstruction is present also in the upward area**

(1) When one outdoor unit is installed individually

- When an obstruction is present also on the air inlet side

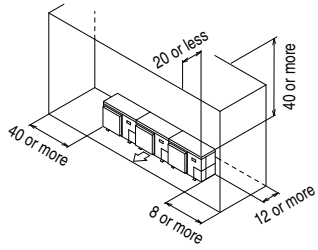


- When an obstruction is present also on the air inlet side and both sides



(2) When two or more outdoor units are installed side by side

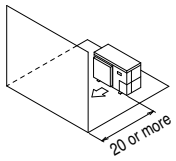
- When an obstruction is present also on the air inlet side and both sides



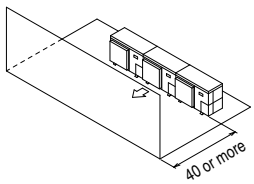
(B) When an obstruction is present on the air outlet side

- **When the upward area is open**

(1) When one outdoor unit is installed individually

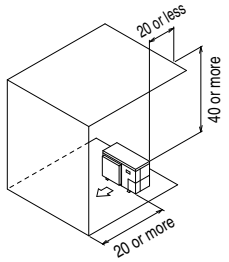


(2) When two or more outdoor units are installed side by side

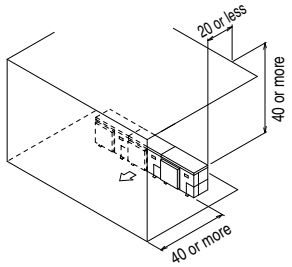


- **When an obstruction is present also in the upward area**

(1) When one outdoor unit is installed individually



(2) When two or more outdoor units are installed side by side



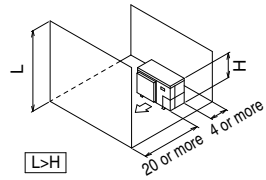
(C) When an obstruction is present on both the air inlet and air outlet sides

<Pattern 1>

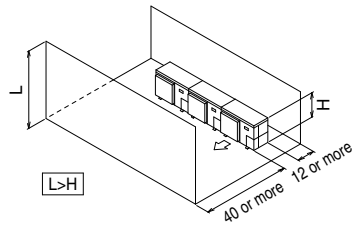
When an obstruction on the air outlet side is higher than the outdoor unit (There is no restriction in the height of obstruction on the air inlet side.)

- **When the upward area is open**

(1) When one outdoor unit is installed individually

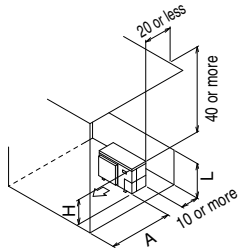


(2) When two or more outdoor units are installed side by side



- **When an obstruction is present also in the upward area**

(1) When one outdoor unit is installed individually



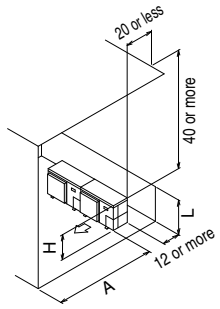
The dimensional relationship between H, L and A is as shown in the table below.

	L	A
L ≤ H	0 < L ≤ 1/2H	30
	1/2H < L ≤ H	40
H < L	**Install the frame to achieve "L ≤ H".**	

⚠ NOTE

- Close the area under the frame so that the outlet air does not bypass there.

(2) When only two outdoor units are installed side by side



The dimensional relationship between H, L and A is as shown in the table below.

	L	A
L ≤ H	0 < L ≤ 1/2H	40
	1/2H < L ≤ H	50
H < L	**Install the frame to achieve "L ≤ H".**	

⚠ NOTE

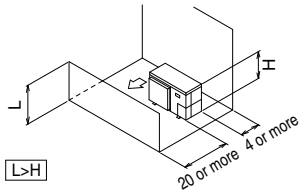
1. Close the area under the frame so that the outlet air does not bypass there.
2. Only two outdoor units can be installed side by side.

<Pattern 2>

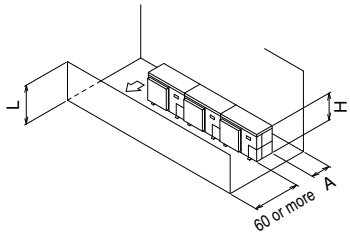
When an obstruction on the air outlet side is lower than the outdoor unit (There is no restriction in the height of obstruction on the air inlet side.)

- **When the upward area is open**

(1) When one outdoor unit is installed individually



(2) When two or more outdoor units are installed side by side

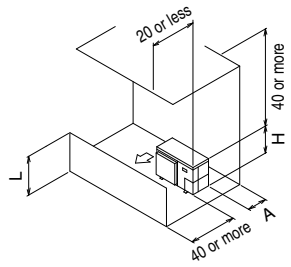


The dimensional relationship between H, L and A is as shown in the table below.

L	A
0 < L ≤ 1/2H	10
1/2H < L ≤ H	12

- **When an obstruction is present also in the upward area**

(1) When one outdoor unit is installed individually



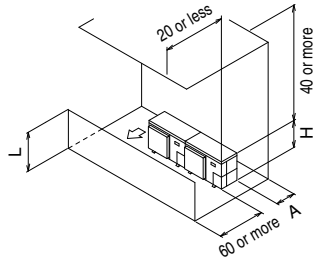
The dimensional relationship between H, L and A is as shown in the table below.

	L	A
L ≤ H	0 < L ≤ 1/2H	4
	1/2H < L ≤ H	8
H < L	**Install the frame to achieve "L ≤ H".**	

⚠ NOTE

- Close the area under the frame so that the outlet air does not bypass there.

(2) When only two outdoor units are installed side by side



The dimensional relationship between H, L and A is as shown in the table below.

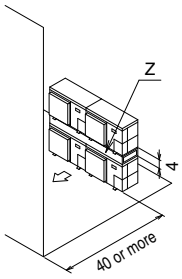
	L	A
L ≤ H	0 < L ≤ 1/2H	10
	1/2H < L ≤ H	12
H < L	**Install the frame to achieve "L ≤ H".**	

⚠ NOTE

1. Close the area under the frame so that the outlet air does not bypass there.
2. Only two outdoor units can be installed side by side.

(D) When outdoor units are stacked

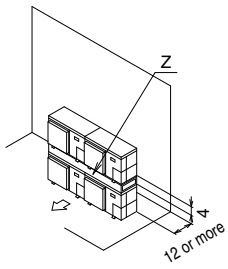
(1) When an obstruction is present on the air outlet side



⚠ NOTE

1. Only two outdoor units can be stacked.
2. About 4 in. is required as the drain piping size for the upper outdoor unit.
3. Close the area Z (gap between the upper outdoor unit and the lower outdoor unit) so that the outlet air does not by-pass there.

(2) When an obstruction is present on the air inlet side

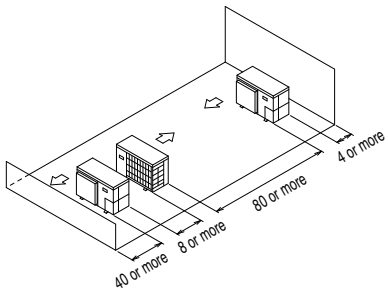


⚠ NOTE

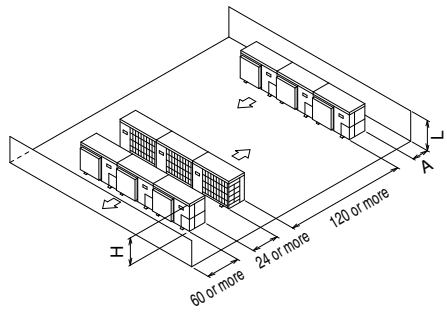
1. Only two outdoor units can be stacked.
2. About 4 in. is required as the drain piping size for the upper outdoor unit.
3. Close the area Z (gap between the upper outdoor unit and the lower outdoor unit) so that the outlet air does not by-pass there.

(E) When outdoor units are installed in rows (on the roof-top, etc.)

(1) When one outdoor unit is installed in each row



(2) When two or more outdoor units are installed side by side

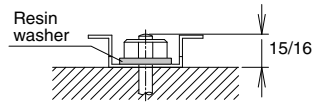


The dimensional relationship between H, L and A is as shown in the table below.

	L	A
L ≤ H	0 < L ≤ 1/2H	10
	1/2H < L ≤ H	12
H < L	**Installation is not allowed.**	

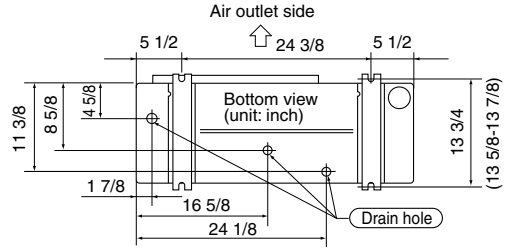
5. CAUTIONS ON INSTALLATION

- Before installation, confirm the strength and levelness of the foundation so that vibrations and noise are not generated.
- Fix the outdoor unit securely on a rigid base with foundation bolts as shown in the foundation drawing below.
  (Prepare 4 sets of commercially available M12-type or equivalent foundation bolts, nuts and washers.)
- Use resin washers to prevent the paint from being scratched off and rusting.
- The foundation bolts should be protruded by 15/16 in.
  (Refer to figure)



〈〈**Drain treatment**〉〉

- In a location where drain from the outdoor unit may cause troubles (for example, where drainage may splash on general passersby), perform the drain piping work using the drain plug (optional).
- For drain treatment, space of at least 4 in. is required under the bottom frame of the outdoor unit.
- In the drain piping work, make sure that drainage is discharged securely.
  (When routing the piping downward, check for water leakage.)



6. REFRIGERANT PIPING WORK

⚠ CAUTION

<To piping technician>

- **Make sure to open the stop valves after finishing the piping work. (Refer to the table shown in " 6-7 Additional refrigerant charge".)**
  (Operating the air conditioner with the stop valve shut may damage the compressor.)
- Use R410A to add refrigerant. (The R410A refrigerant cylinder has a pink stripe painted around it.)
  All field piping must be installed by a licensed refrigeration technician and must comply with relevant local and national regulations.
- **BRAZING REFRIGERANT PIPING**
  Do not use flux when brazing copper-to copper refrigerant piping.
  (Particularly for the HFC refrigerant piping) Therefore, use the phosphor copper brazing filler metal (BCuP) which does not require flux.
  (Flux has an extremely negative effect on refrigerant piping systems. For instance, if chlorine based flux is used, it will cause pipe corrosion. Flux containing fluorine will damage refrigeration oil.)

⚠ NOTE

- Maximum piping length between the outdoor and indoor unit:

Indoor unit	FAQ FCQ FHQ	FTQ
Max. piping length	164 ft.	98 ft.

- Installation tools:
  Make sure to use installation tools (gauge manifold charge hose, etc.) that are exclusively used for R410A installations to withstand the pressure and to prevent foreign materials (e.g. mineral oils such as SUNISO and moisture) from mixing into the system.
  (The screw specifications differ for R410A and R407C.)
  Vacuum pump (use a 2-stage vacuum pump with a non-return valve):
  1. Make sure the pump oil does not flow oppositely into the system while the pump is not working.
  2. Use a vacuum pump which can evacuate to –14.6 psi.

6-1 Selection of piping material

1. Foreign materials inside pipes (including oils for fabrication) must be 0.14gr/10ft. or less.
2. Use the following material specification for refrigerant pipping:
   - Construction material: Phosphoric acid deoxidized seamless copper for refrigerant.
   - Size: liquid pipe: ϕ3/8"
     gas pipe: ϕ5/8"

6-2 Protection of piping

- Protect the piping to prevent moisture and dusts from coming into the piping.
- Especially, pay attention when passing the piping through a hole or connecting the end of piping to the outdoor.

Location	Working period	Protection method
Outdoor	1 month or more	Pinch pipes
	Less than 1 month	Pinch or tape pipes
Indoor	Regardless of period	

6-3 Piping connection

- **For handling of stop valves, refer to "Stop valve operation method" in "6-7 Additional refrigerant charge".**
- **Only use the flare nuts attached to the stop valves. Using different flare nuts may cause the refrigerant to leak.**
- **Be sure to perform a nitrogen blow when brazing.**

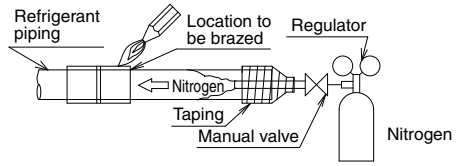
(Brazing without performing nitrogen replacement or releasing nitrogen into the piping will create large quantities of oxidized film inside the pipes, adversely affecting valves and compressor in the refrigerating system and preventing normal operation.)

⚠ DANGER

- Use of oxygen could cause an explosion resulting in severe injury or death. Only use nitrogen gas.
- Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan heater, stove or cooking device. Exposure to this gas could cause severe injury or death.

⚠ NOTE

- When brazing with blowing nitrogen, set the nitrogen pressure to 2.9 psi or less by using a pressure reducing valve.



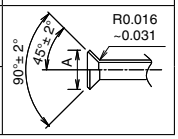
⚠ CAUTION

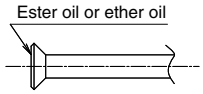
- Do not use anti-oxidants when brazing.
  Residue can clog pipes and break the unit.

◎ Do not let any refrigerant other than the specified refrigerant enter the refrigerant system.
◎ Do not let any gas such as air enter the refrigerant system.

〈**Precautions when connecting the piping**〉

- See the following table for flare dimensions.
- When connecting the flare nuts, apply refrigeration oil to the inside of the flares and turn them three or four times at first. (Use ester oil or ether oil.)
- See the following table for tightening torque. (Applying too much torque may cause the flares to crack.)
- After connecting all the piping perform a gas leak check by using nitrogen.

Pipe size	Tightening torque (ft·lbf)	Flare dimension A (in.)	Flare shape (in.)
ϕ3/8”	24.1 - 29.4	0.504 - 0.520	
ϕ5/8”	45.6 - 55.6	0.760 - 0.776	



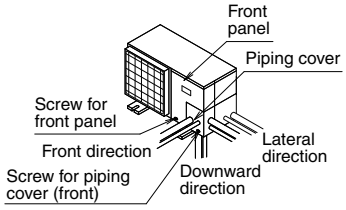
- If you are obliged to install the unit without a torque wrench, you may follow the installation method mentioned below. After the work is finished, make sure to check that there is no gas leak.
- When you keep on tightening the flare nut with a spanner, there is a point where the tightening torque suddenly increases.
  From that position, further tighten the flare nut the angle shown below.

Pipe size	Tightening angle (Guideline)	Recommended arm length of tool (in.)
ϕ3/8”	60°~90°	Approx. 7 7/8
ϕ5/8”	30°~60°	Approx. 11 13/16

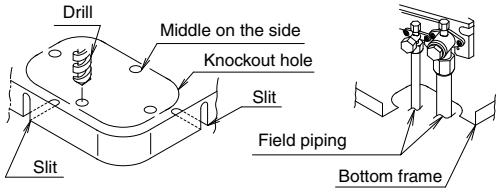
Disposal requirements
Dismantling of the unit, treatment of the refrigerant, oil and eventual other parts should be comply the relevant local and national regulations.

6-4 Refrigerant piping work procedure

◎ The field piping can be connected in three directions.



◎ When connecting the piping downward, remove the knockout hole by making four holes in the middle on the each side of the knockout hole with a drill.



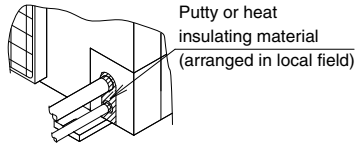
Then cut out the corner of the bottom frame along the slits (in two positions) by using a hacksaw.
◎ After removing the parts, it is recommended to apply repair paint on the edges, to prevent rusting.

Cautions on connecting the connection piping

- When it is expected that water condensed in the stop valve will reach the indoor unit through the gap between the heat insulating material and the piping (for example, when the outdoor unit is installed in a higher position than the indoor unit), take proper action such as caulking the connection area.

[Measures to prevent invasion of small creatures and litter]

- Block all gaps in the piping penetration areas with putty or heat insulating material (arranged in the local field) as shown in the figure below.
  (If small creatures such as insects or litter enter the outdoor unit, a short-circuit may be caused inside the control box.)



6-5 Heat insulation of piping

- Make sure to insulate the field piping (on both the liquid line and gas line) and refrigerant branching kit.
  (If they are not insulated, water leakage may be caused.)
  Be sure to use insulation that is designed for use with HVAC Systems.
- Reinforce the refrigerant piping according to the installation environment. If it is not reinforced, condensate may form on the surface of the insulation.

⚠ WARNING

- Make sure to insulate the field piping up to the piping connection area inside the unit. If the piping is exposed, dew condensation and burn by contact may be caused.

6-6 Airtight test and vacuum drying

The unit has been checked for leaks by the manufacturer. Confirm that the valves are firmly closed before airtight test or vacuumdrying.
To prevent entry of any impurities and insure sufficient pressure resistance, always use the special tools dedicated for R410A.

Perform the following inspections securely after the piping work.

- **Airtight test** - Make sure to use nitrogen gas. (For the service port position, refer to the figure in “**Stop valve operation method**”.)
  [Procedure] Pressurize the air conditioner from the liquid pipe and gas pipe up to 450 psi (Make sure not to exceed 450 psi). When the pressure does not drop for 24 hours, the piping work shall be accepted.
  If the pressure drops, check for leakage positions. (Confirm that there is no leakage, then release nitrogen.)

- **Vacuum drying** - Use a vacuum pump which can evacuate up to –14.6 psi or less.
  [Procedure] Operate the vacuum pump for evacuation for 2 hours or more using both liquid pipe and gas pipe until the vacuum pressure reaches –14.6 psi or less. Leave the air conditioner at –14.6 psi or less for 1 hour or more, and confirm that the vacuum pressure indicated by the vacuum gage does not increase.
  (If the vacuum pressure increases, the system may contain moisture or have leakage.)

If there is a possibility of moisture remaining in the piping (for example, when there is a possibility of dew condensation inside the piping because the piping work was performed in the rainy season or over a long period of time, or when rainwater may have entered the piping during the work)
Perform evacuation described above for 2 hours (vacuum drying), pressurize the air conditioner up to 7 psi (vacuum break) with nitrogen gas, then evacuate the air conditioner using the vacuum pump for 1 hour to achieve –14.6 psi or less (vacuum drying).
(If the vacuum pressure does not reach –14.6 psi or less even after evacuation for 2 hours or more, repeat vacuum break and vacuum drying.) Leave the air conditioner in the vacuum status for 1 hour or more, and confirm that the vacuum pressure indicated by the vacuum gauge does not increase.

6-7 Additional refrigerant charge

⚠ WARNING

- To avoid injury always use protective gloves and eye protection when charging refrigerant.
- To avoid injury do not charge with unsuitable substances. Use only the appropriate refrigerant.

⚠ NOTE

- Refrigerant cannot be charged until field wiring has been completed.
  Refrigerant may only be charged after performing the airtight test and the vacuum drying (see above).
  When charging refrigerant into the system, take care that its maximum allowable charge is never exceeded, in view of the danger of liquid hammer.
  Refrigerant containers shall be opened slowly.
  To avoid compressor breakdown, do not charge the refrigerant more than the specified amount to raise the condensing pressure.

- This outdoor unit is factory charged with refrigerant.
- Charge the additional refrigerant calculated by the formula below.

Additional charging amount	=	Liquid piping length × 0.036	+	Additional charging depended on type of indoor unit
(lb.)		(ft.)×0.036		A (lb.)

Indoor unit	FAQ FCQ FHQ	FTQ
Additional charging A (lb.)	0	1.54

Record the additional amount to the label stuck on the back of front panel.

- Charge the refrigerant to the liquid pipe in its liquid state. Since R410A is a mixed refrigerant, its composition changes if charged in a state of gas and normal system operation would no longer be assured.
- Before filling, check whether the tank has a siphon attached or not.

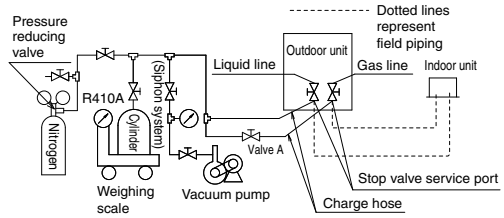
How to fill a tank with a siphon attached.

Fill with the tank upright.
(There is a siphon tube inside, so there is no need to turn the tank upside-down.)

Other ways of filling the tank

Fill with the tank upside-down.

- After the vacuum drying is finished, charge the additional refrigerant in its liquid state through the liquid stop valve service port.
  Taking into account following instructions:
  1. Check that gas and liquid stop valves are closed.
  2. Charge the specified amount of refrigerant.
- If the outdoor unit is not in operation and the total amount cannot be charged, follow the procedures for additional refrigerant charge shown below.
- Make sure to use installation tools you exclusively use on R410A installations to withstand the pressure and to prevent foreign materials from mixing into the system.
- Procedures for charging additional refrigerant.



See the “Cautions on service” label on the back of the front panel for the settings for operation after replenishing refrigerant.

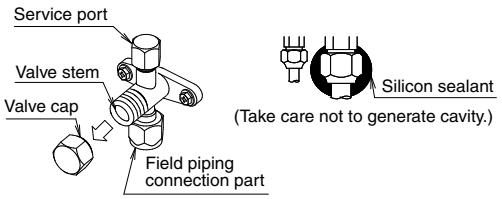
1. Open the gas line stop valve (leaving the liquid line stop valve, valve A in the diagram above, close) and perform the operation to add the refrigerant.
2. Once the appropriate amount of refrigerant is in, press the confirmation button (BS3) on the outdoor unit PC board (A2P), and stop operation.
3. Open the stop valves quickly (both liquid and gas line valves).
   (This must be done quickly to avoid the possibility that the pipe might burst.)

C: 3P281953-2A

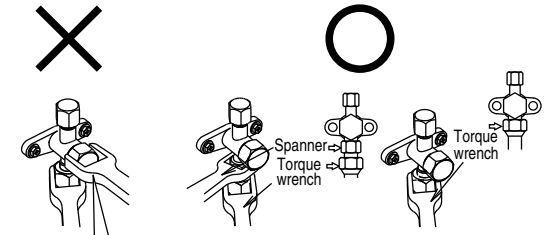
Stop valve operation

Cautions on handling the stop valve

- The figure below shows the name of each part required in handling the stop valve. At the time of shipment, the stop valve is closed.



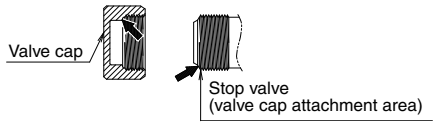
- If only a torque wrench is used to loosen or tighten the flare nut, the side plate may be distorted. Make sure to fix the stop valve with a spanner, then loosen or tighten the flare nut with a torque wrench.


Spanner
Torque wrench
Torque wrench
Spanner prohibition to valve cap and body part
Stop valve of two hangs structure
Stop valve of one hang structure

- When it is expected that the operating pressure will be low (for example, when cooling will be performed while the outside air temperature is low), seal sufficiently the flare nut in the stop valve on the gas line with silicon sealant to prevent freezing.

Cautions on handling the valve cap

- The valve is sealed in the arrow area. Take care not to damage the arrow area.



- After handling the valve, make sure to tighten the valve cap securely.

Liquid line	Gas line
10.0~12.2 ft·lbf	16.6~20.3 ft·lbf

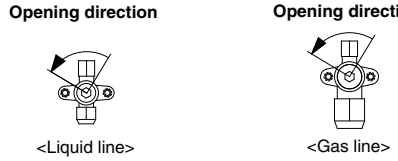
Cautions on handling the service port

- Use charge hose equipped with push in the work.
- After the work, make sure to tighten the valve cap securely. Tightening torque.....8.5~10.3 ft·lbf

[Stop valve operation method]
Prepare hexagon wrenches (whose size is 4 mm and 6 mm).

How to open the stop valve
1. Insert a hexagon wrench into the valve stem, and turn the valve stem counterclockwise.
2. When the valve stem cannot be turned any more, stop turning. Now, the valve is open.

How to close the stop valve
1. Insert a hexagon wrench into the valve stem, and turn the valve stem clockwise.
2. When the valve stem cannot be turned any more, stop turning. Now, the valve is closed.



7. ELECTRIC WIRING WORK

⚠ DANGER

- Do not ground units to water pipes, telephone wires or lightning rods because incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.

⚠ WARNING

- Disconnect all power to unit to avoid possible electric shock during installation.
- Use only specified wire and connect wires to terminals tightly. Be careful that wires do not place external stress on terminals. Keep wires in neat order so as to not to obstruct other equipment. Incomplete connections could result in overheating, and in worse cases, electric shock or fire. For the details, refer to "**7-3 Power supply wiring connection procedure**".

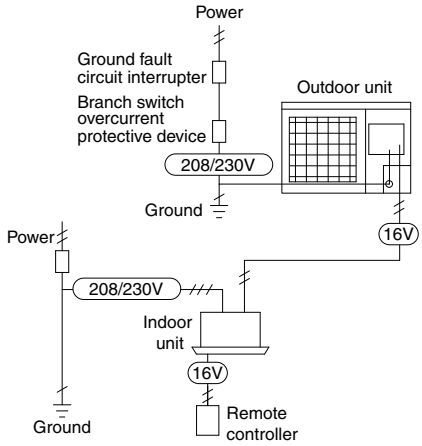
⚠ CAUTION

<To electrician>
- Do not operate the air conditioner until the refrigerant piping work is completed. (Operating the air conditioner before the refrigerant piping work is completed may damage the compressor.)
- Install a ground fault circuit interrupter. (The inverter is provided in the air conditioner. In order to prevent malfunction of the ground fault circuit interrupter itself, use a breaker resistant to higher harmonics.)

- Electricians having sufficient knowledge should perform the electric wiring work. All wiring must comply with local electrical codes and National Electrical Code (NEC).

- Perform the electric wiring work in accordance with the "electric wiring diagram label".
  Make sure to turn OFF the branch switch and overcurrent protective device before starting the work.
- Perform grounding to the indoor unit and outdoor unit.
- Use only copper wires.
- Make sure to turn the power off before starting the electric wiring work.
  Do not turn ON any switch until the work is completed.
- The outdoor unit has an inverter which generates noise and charges the outer casing with the leakage current. The outdoor unit should be grounded so that the effect of the generated noise on other equipment can be reduced, and that the outer casing can be discharged.
- As this unit is equipped with an inverter, installing a phase advancing capacitor will not only reduce the power factor improvement factor, but may also cause the capacitor to overheat due to high-frequency waves. Therefore, never install a phase advancing capacitor.
- Never push excessive electric wires into the units.
- Protect electric wires with conduit tubes or vinyl tubes so that they will not be damaged by edges of knockout holes.
- Fix electric wires with clamps as accessories so that they will not come to contact with pipes and stop valves.
  (Refer to "**7-3 Power supply wiring connection procedure**".)

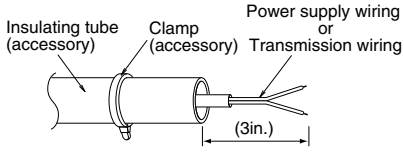
7-1 Connection example of whole system wiring



7-2 Routing power supply wiring and transmission wiring

Let the power supply wiring with a conduit pass through one of the knockout holes on the front or side cover, and let the transmission wiring with a conduit pass through another knockout hole.

- For protection from uninsulated live parts, thread the power supply wiring or the transmission wiring through the included insulating tube and secure it with the included clamp.



〈**Precautions when knocking out knockout holes**〉

- To punch the knockout hole, hit it with a hammer.
- After removing the knockout hole, it is recommended that the edges should be painted to prevent rusting.

⚠ CAUTION

- Use conduit for both the power supply wiring and transmission wiring.
- Outside the unit, make sure to keep the wirings 5 inches away.
  Otherwise, the outdoor unit may be affected by electrical noise (external noise), and malfunction or fail.
- Be sure to connect the power supply wiring to the terminal block and secure it as described in "7-3 Power supply wiring connection procedure".
- Fix the wiring between the units in accordance with "7-4 Transmission wiring connection procedure".
- Secure the wirings with the clamps (accessory) so that do not touch the piping.
- Make sure the wirings will not be pinched by the front panel, and close the panel firmly.
- Route the conduit along the unit by using a elbow socket and so on to prevent it from being stepped on.

7-3 Power supply wiring connection procedure

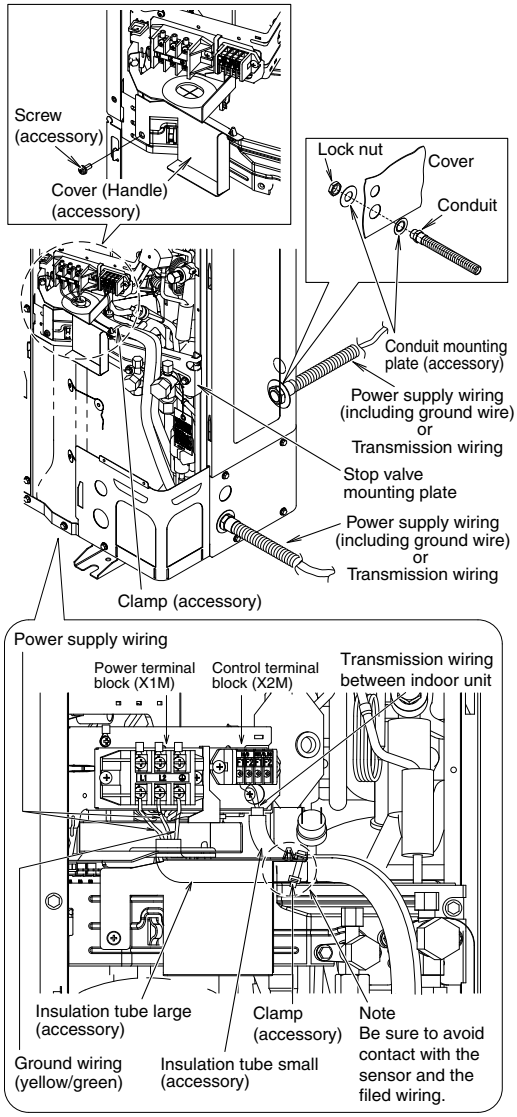
⚠ WARNING

- Never connect power supply wiring to the terminal block for remote controller wiring as this could damage the entire system.

Install a ground fault circuit interrupter.

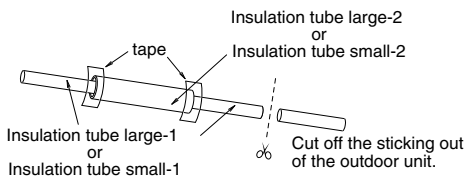
- It is obliged to install a ground fault circuit interrupter to prevent electric shock and fire accident.

Model	Phase and frequency	Voltage	Max.Overcurrent Protective Device	Min. Circuit Amps.
RZQ18PVJU RZR18PVJU	~ 60Hz	208/230V	20A	16.5A
RZQ24PVJU RZR24PVJU				
RZQ30PVJU RZR30PVJU				



How to Insulation tube.

- Use the insulation tube large to cover the power supply wiring.
  Use the insulation tube small to cover the transmission wiring.
- Joint the insulation tube with the tape and cut off the tube sticking out of the outdoor unit.

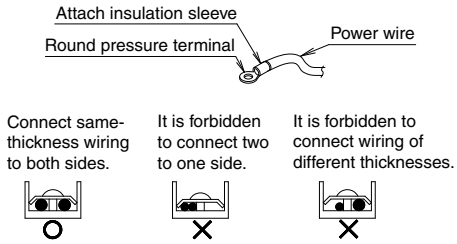


⚠ CAUTION

- After finishing the electric wiring work, confirm that all the wirings are connected securely.

〈〈**Precautions when laying power wiring**〉〉

- Two electric wires of different thickness cannot be connected to the power terminal block.
  (Slack in the electric wires may generate abnormal heat.)
- Use round pressure terminals with insulting sleeve for connection to the power terminal block.
  If such terminals are not available for unavoidable reasons, connect an electric wire of the same thickness to each side as shown in the figure.



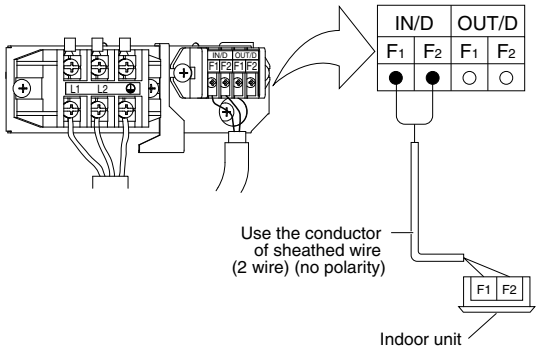
Make sure to observe the following items. If they are not observed, abnormal heat may be generated by slack in electric wires, etc.

- For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal board.
- Use an appropriate screwdriver for tightening the terminal screws.
  A screwdriver with a small head will strip the head and make proper tightening impossible.
- Over-tightening the terminal screws may break them.
- See the table below for tightening torque for the terminal screws.

Tightening torque (ft·lbf)		
M5	(Power supply and ground terminal block)	1.76 ~ 2.15
M4	(Shielded ground)	0.87 ~ 1.06
M3.5	(Transmission wiring terminal block)	0.58 ~ 0.72

7-4 Transmission wiring connection procedure

- **If an excessive force is applied while connecting a cable to the terminal block on the PC board, the PC board may be damaged.**



⚠ CAUTION

- For low-noise operation, it is necessary to install the optional "External control adaptor for outdoor unit".
  For details, see the installation manual attached to the adaptor.

Caution on the wiring length between units

Make sure to observe the restrictions below. If they are not observed, transmission error may occur.
Maximum wiring length: 3280 ft.

Cautions on the wiring between units

- Never connect 208/230V to the terminal block for the transmission wiring.
  Doing so will break the entire system.
- The transmission wiring from the indoor unit must be connected to the F1/F2 (TO IN/D UNIT) terminals on the PC board in the outdoor unit.

∗ Make sure to use sheathed two-core cables of AWG18-16 in the wiring shown above.

∗ **All cables used in the wiring between the units should be procured on the site.**

8. CHECKS AFTER COMPLETION OF WORK

After completing the work, make sure to confirm the following items:

1. Connection of drain piping and removal of transport fittings:
   Refer to "**5. CAUTIONS ON INSTALLATION**".
2. Connection of power supply wiring and tightening of screws:
   Refer to "**7-3 Power supply wiring connection procedure**".
3. Connection of transmission wiring and tightening of screws:
   Refer to "**7-4 Transmission wiring connection procedure**".
4. Freezing connection of refrigerant piping
   Refer to "**6. REFRIGERANT PIPING WORK**".
5. Piping size and heat insulation:
   Refer to "**6-1 Selection of piping material**", "**6-5 Heat insulation of piping**".
6. Check of stop valve:
   Confirm that the stop valve is open on both the liquid line and gas line.
7. Record of amount of additional refrigerant:
   Record the amount on the label stuck on the back of the front panel.
8. Measurement of insulation in main power circuit:
   - Use the megatester for 500 V.
   - Do not use any megatester for low voltage electric circuits except 230 V.
     (Wiring between the outdoor unit and the indoor unit)

⚠ CAUTION

<To piping technician>

- Make sure to open the stop valve after finishing the piping work.
  (Operating the air conditioner with the stop valve shut may damage the compressor.)

9. TEST RUN PROCEDURE

A crankcase heater is mounted for smooth startup. Make sure to turn on the power 6 hours before starting operation for supplying the power to the crankcase heater.

⚠ WARNING

- Make sure to close the front panel before leaving the outdoor unit in the power ON status.
- To avoid injury, always make sure that the overcurrent protective device on the power supply panel of the installation is switched off before doing any work.

Cautions before turning on the power

- **Put the insulating cover securely onto the control box.**
- **After turning on the power, check the settings and LED indicators on the PC board (A1P) in the outdoor unit through the opening of the insulating cover.**

9-1 Power on and check operation

- Make sure to perform the check operation after installation.
  (If the air conditioner is operated using the indoor remote controller without performing the check operation, the malfunction code "U3" is displayed in the indoor remote controller, and normal operation is disabled.)

- In the check operation, the status of the outdoor unit is checked, and incorrect wiring is checked for.

(1) • Close the front panel of the outdoor unit. • Turn ON the power to the outdoor unit and indoor unit.	⚠ **Caution** Make sure to turn on the power 6 hours before starting operation for supplying the power to the crankcase heater.
(2) • Open the front panel of the outdoor unit. • Check the LED on the PC board (A1P and A2P) in the outdoor unit to see if the data transmission is performed normally.	The power is supplied to the outdoor unit. Take due care during the work to prevent electric shock.

	A1P	A2P						
LED display (Default status before delivery)	SERVICE MONITOR	MODE	TEST/HWL	IND	MASTER	SLAVE	L.N.O.P.	DEMAND
	HAP	**H1P**	**H2P**	**H3P**	**H4P**	**H5P**	**H6P**	**H7P**
Outdoor unit installed	◑	●	●	○	●	●	●	●

LED display: ● OFF ○ ON ◑ Blinking

(3) • When performing the low-noise operation (L.N.O.P.) or demand (DEMAND) operation upon request from the customer, perform the setting using the pushbutton switches (BS1 to BS5) on the PC board (A2P) in the outdoor unit. • Press each pushbutton switch from the opening of the insulation cover. (Do not remove the insulation cover.)	• The power is supplied to the outdoor unit. Take due care during the work to prevent electric shock. • Before using the pushbutton switches (BS1 to BS5) for setting, confirm that the microcomputer (SERVICE) monitor is lit. • For the setting method, refer to the [Cautions on service] label attached on the back of the front panel of the outdoor unit. (Make sure to write the contents of setting on the [Cautions on service] label.)
(4) Confirm that the stop valves are open on both the liquid and gas lines. If they are closed, open them.	⚠ **Caution** Do not leave any stop valve closed. Otherwise the compressor will fail.
(5) Press and hold the test run button (BS4) for 5 seconds or more to start the check operation. For the details, refer to the **Check operation procedure** on the [Cautions on service] label.	• When leaving the outdoor unit during the check operation for unavoidable reasons, ask another installation worker to watch the outdoor unit, or close the front panel. • The system operates the check operation for about 15 minutes (30 minutes maximum), then stops automatically. The system can start normal operation about 5 minutes after the check operation if the remote controller does not display any malfunction code. • During the check operation, the status under execution is indicated on the remote controller.
(6) After the check operation, make sure to close the front panel of the outdoor unit.	

<Cautions on check operation>

- If the air conditioner is started within about 12 minutes after the power of the indoor/outdoor unit is turned on, the H2P indicator lights and the compressor does not run. Confirm that the LED status is as shown in the table in (2) in "**9-1 Power on and check operation**" before starting the air conditioner.
- The air conditioner may require about 10 minutes maximum until it can start the compressor after start of operation. This period of time is required to homogenize the refrigerant status, and does not indicate any failure.
- The check operation does not provide any means of checking the indoor unit individually. For that purpose, perform the normal operation using the remote controller after finishing the check operation.
- The check operation is not available in any other mode such as the recovery mode.
- Before running a check on the unit, changing the indoor remote controller settings might cause the error code "UF" to be displayed and prevent a proper check to be run.

9-2 Checks in normal operation

- After finishing the check operation, operate the air conditioner normally. (Heating is not available if the outside air temperature is 75 °F or more. Refer to the operation manual supplied together with the unit.) (Heating is only available for RZQ-P models.)
- Confirm that the indoor and outdoor units are operating normally. (If a knocking sound is heard in the liquid compression of the compressor, stop the air conditioner immediately and energize the crankcase heater for a sufficient period of time, then start the operation again.)
- Check to see if cold (or hot) air is coming out of the indoor unit.
- Press the fan direction button and fan speed control button on the remote controller to see if the fan is operating normally.

<Cautions for normal operation check>

- Once stopped, the compressor will not start for about 5 minutes even if the "**ON/OFF**" button on the remote controller is pressed.
- When the system operation is stopped by the remote control, the outdoor unit may continue to operate for a further 3 minutes.
- If the system has not undergone the check operation by the test run button since it was first installed, a malfunction code "U3" is displayed. In this case, perform the check operation by referring to "**9-1 Power on and check operation**".

When a malfunction code is displayed in the remote controller

(Check a malfunction code in the remote controller connected to the indoor unit.)

Malfunction code	Cause	Solution
E3	The stop valves in the outdoor unit remain closed.	Open the stop valve on both the gas and liquid lines.
	The refrigerant is overcharged.	Calculate again the required amount of refrigerant to be charged based on the piping length, recover the refrigerant using the refrigerant recovery device, then achieve proper amount of refrigerant.
E4 F3	The stop valves in the outdoor unit remain closed.	Open the stop valve on both the gas side and liquid side.
	The operation mode on the remote controller was changed before the check operation.	Set the operation mode on all indoor unit remote controllers to “cooling.”
	The refrigerant is insufficient.	• Check whether additional refrigerant charge has been finished correctly. • Calculate again the required amount of refrigerant to be charged based on the piping length, then charge additionally proper amount of refrigerant.
F6	The refrigerant is overcharged.	Calculate again the required amount of refrigerant to be charged based on the piping length, recover the refrigerant using the refrigerant recovery device, then achieve proper amount of refrigerant.
U3	The check operation has not performed.	Perform the check operation.
U4	The power is not supplied to the outdoor unit.	Connect correctly the power supply wiring of the outdoor unit.
UA	Improper type of indoor unit is connected.	Check the type of indoor unit currently connected. If it is not proper, replace it with proper one.
UF	The stop valves in the outdoor unit remain closed.	Open the stop valve on both the gas and liquid lines.
	The piping and wiring of the indoor unit are not connected correctly to the outdoor unit.	Confirm that the piping and wiring of the indoor unit are connected correctly to the outdoor unit.
	The operation mode on the remote controller was changed before the check operation.	Set the operation mode on indoor unit remote controller to “cooling.”
UH	The transmission wiring is not connected correctly.	Connect correctly the transmission wiring to the F1 and F2 (TO IN/D UNIT) terminals on the PC board (A1P) in the outdoor unit.

When nothing is displayed in the remote controller

- There might be a problem with the connection or transmission between the indoor unit and the remote controller. Check connections, and check for wire breakage.

⚠ CAUTION

<To piping technician>
<To electrician>
- **After finishing the test run and before using the unit by customer, confirm that the front panel and screws are attached securely to the unit.**

10. CAUTION FOR REFRIGERANT LEAKS

⚠ DANGER

- Refrigerant gas is heavier than air and replaces oxygen. A massive leak could lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.

(Points to note in connection with refrigerant leaks)

Introduction

The installer and system specialist shall secure safety against leakage according to local regulations or standards. The following standards may be applicable if local regulations are not available.

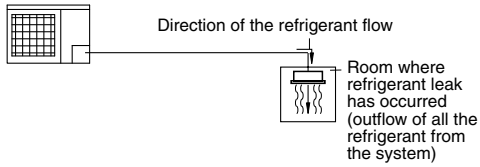
The Split System, like other air conditioning systems, uses R410A as refrigerant. R410A itself is an entirely safe non-toxic, non-combustible refrigerant. Nevertheless care must be taken to ensure that air conditioning facilities are installed in a room which is sufficiently large. This assures that the maximum concentration level of refrigerant gas is not exceeded, in the unlikely event of major leak in the system and this in accordance to the local applicable regulations and standards.

Maximum concentration level

The maximum charge of refrigerant and the calculation of the maximum concentration of refrigerant is directly related to the humanly occupied space in to which it could leak.

The unit of measurement of the concentration is lb./ft³ (the weight in lb. of the refrigerant gas in 1ft³ volume of the occupied space).

Compliance to the local applicable regulations and standards for the maximum allowable concentration level is required.


Direction of the refrigerant flow
Room where refrigerant leak has occurred (outflow of all the refrigerant from the system)

3P281953-2A

Pay a special attention to the place, such as a basement, etc. where refrigerant can stay, since refrigerant is heavier than air.

Procedure for checking maximum concentration

Check the maximum concentration level in accordance with steps 1 to 4 below and take whatever action is necessary to comply.

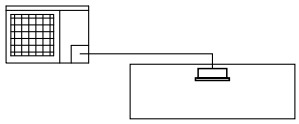
1. Calculate the amount of refrigerant (lb.) charged to each system separately.

amount of refrigerant in the unit (amount of refrigerant with which the system is charged before leaving the factory)	+	additional charging amount (amount of refrigerant added locally in accordance with the length or diameter of the refrigerant piping and type of indoor unit)	=	total amount of refrigerant (lb.) in the system

NOTE

- Where a single refrigerant facility is divided into 2 entirely independent refrigerant systems then use the amount of refrigerant with which each separate system is charged.

2. Calculate a room volume (ft³)



3. Calculate the refrigerant concentration by using the results of the calculations in steps 1 and 2 above.

$$\frac{\text{total amount of refrigerant in the system}}{\text{volume (ft}^3\text{) of the room in which there is an indoor unit installed}} \leq \text{maximum concentration level (lb./ft}^3\text{)}$$

4. Deal with the situations where the result exceeds the maximum concentration level.
Where the installation of a facility results in a concentration in excess of the maximum concentration level then it will be necessary to revise the system.
Please consult your dealer.

15.2 RZR36PVJU / RZR42PVJU / RZQ36PVJU9 / RZQ42PVJU9

SPLIT SYSTEM Air Conditioners Installation manual

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1. SAFETY CONSIDERATIONS

Read these “SAFETY CONSIDERATIONS for Installation” carefully before installing air conditioning equipment. After completing the installation, make sure that the unit operates properly during the startup operation.
Instruct the customer on how to operate and maintain the unit. Inform customers that they should store this Installation Manual with the Operation Manual for future reference.
Always use a licensed installer or contractor to install this product.
Improper installation can result in water or refrigerant leakage, electrical shock, fire, or explosion.
Meanings of **DANGER**, **WARNING**, **CAUTION**, and **NOTE** Symbols:

⚠ **DANGER** ..... Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING**..... Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION**..... Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
It may also be used to alert against unsafe practices.

⚠ **NOTE** ..... Indicates situations that may result in equipment or property-damage accidents only.

⚠ DANGER

- **Refrigerant gas is heavier than air and replaces oxygen. A massive leak can lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.**
- **Do not ground units to water pipes, gas pipes, telephone wires, or lightning rods as incomplete grounding can cause a severe shock hazard resulting in severe injury or death. Additionally, grounding to gas pipes could cause a gas leak and potential explosion causing severe injury or death.**
- **If refrigerant gas leaks during installation, ventilate the area immediately. Refrigerant gas may produce toxic gas if it comes in contact with fire. Exposure to this gas could cause severe injury or death.**
- **After completing the installation work, check that the refrigerant gas does not leak throughout the system.**
- **Do not install unit in an area where flammable materials are present due to risk of explosions that can cause serious injury or death.**
- **Safely dispose all packing and transportation materials in accordance with federal/state/local laws or ordinances. Packing materials such as nails and other metal or wood parts, including plastic packing materials used for transportation may cause injuries or death by suffocation.**

⚠ WARNING

- **Only qualified personnel must carry out the installation work. Installation must be done in accordance with this installation manual. Improper installation may result in water leakage, electric shock, or fire.**
- **When installing the unit in a small room, take measures to keep the refrigerant concentration from exceeding allowable safety limits. Excessive refrigerant leaks, in the event of an accident in a closed ambient space, can lead to oxygen deficiency.**
- **Use only specified accessories and parts for installation work. Failure to use specified parts may result in water leakage, electric shocks, fire, or the unit falling.**
- **Install the air conditioner on a foundation strong enough that it can withstand the weight of the unit. A foundation of insufficient strength may result in the unit falling and causing injuries.**
- **Take into account strong winds, typhoons, or earthquakes when installing. Improper installation may result in the unit falling and causing accidents.**
- **Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local, state, and national regulations. An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.**
- **Make sure that all wiring is secured, that specified wires are used, and that no external forces act on the terminal connections or wires. Improper connections or installation may result in fire.**
- **When wiring, position the wires so that the control box cover can be securely fastened. Improper positioning of the control box cover may result in electric shocks, fire, or the terminals overheating.**
- **Before touching electrical parts, turn off the unit.**
- **Be sure to install a ground fault circuit interrupter if one is not already available. This helps prevent electrical shocks or fire.**
- **Securely fasten the outdoor unit terminal cover (panel). If the terminal cover/panel is not installed properly, dust or water may enter the outdoor unit causing fire or electric shock.**
- **When installing or relocating the system, keep the refrigerant circuit free from substances other than the specified refrigerant (R410A) such as air. Any presence of air or other foreign substance in the refrigerant circuit can cause an abnormal pressure rise or rupture, resulting in injury.**
- **Do not change the setting of the protection devices. If the pressure switch, thermal switch, or other protection device is shorted and operated forcibly, or parts other than those specified by Daikin are used, fire or explosion may occur.**

⚠ CAUTION

- **Do not touch the switch with wet fingers. Touching a switch with wet fingers can cause electric shock.**
- **Do not allow children to play on or around the unit to prevent injury.**
- **Do not touch the refrigerant pipes during and immediately after operation as the refrigerant pipes may be hot or cold, depending on the condition of the refrigerant flowing through the refrigerant piping, compressor, and other refrigerant cycle parts. Your hands may suffer burns or frostbite if you touch the refrigerant pipes. To avoid injury, give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.**

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- **Heat exchanger fins are sharp enough to cut. To avoid injury wear glove or cover the fins when working around them.**
- **Install drain piping to proper drainage. Improper drain piping may result in water leakage and property damage.**
- **Insulate piping to prevent condensation.**
- **Be careful when transporting the product.**
- **Do not turn off the power immediately after stopping operation. Always wait for at least 5 minutes before turning off the power. Otherwise, water leakage may occur.**
- **Do not use a charging cylinder. Using a charging cylinder may cause the refrigerant to deteriorate.**
- **Refrigerant R410A in the system must be kept clean, dry, and tight.**
  - **(a) Clean and Dry -- Foreign materials (including mineral oils such as SUNISO oil or moisture) should be prevented from getting into the system.**
  - **(b) Tight -- R410A does not contain any chlorine, does not destroy the ozone layer, and does not reduce the earth's protection again harmful ultraviolet radiation. R410A can contribute to the greenhouse effect if it is released. Therefore take proper measures to check for the tightness of the refrigerant piping installation. Read the chapter Refrigerant Piping and follow the procedures.**
- **Since R410A is a blend, the required additional refrigerant must be charged in its liquid state. If the refrigerant is charged in a state of gas, its composition can change and the system will not work properly.**
- **The indoor unit is for R410A. See the catalog for indoor models that can be connected. Normal operation is not possible when connected to other units.**
- **Remote controller (wireless kit) transmitting distance can be shorter than expected in rooms with electronic fluorescent lamps (inverter or rapid start types). Install the indoor unit far away from fluorescent lamps as much as possible.**
- **Indoor units are for indoor installation only. Outdoor units can be installed either outdoors or indoors.**
- **Do not install the air conditioner in the following locations:**
  - **(a) Where a mineral oil mist or oil spray or vapor is produced, for example, in a kitchen. Plastic parts may deteriorate and fall off or result in water leakage.**
  - **(b) Where corrosive gas, such as sulfurous acid gas, is produced. Corroding copper pipes or soldered parts may result in refrigerant leakage.**
  - **(c) Near machinery emitting electromagnetic waves. Electromagnetic waves may disturb the operation of the control system and cause the unit to malfunction.**
  - **(d) Where flammable gas may leak, where there is carbon fiber, or ignitable dust suspension in the air, or where volatile flammables such as thinner or gasoline are handled. Operating the unit in such conditions can cause a fire.**
- **Take adequate measures to prevent the outdoor unit from being used as a shelter by small animals. Small animals making contact with electrical parts can cause malfunctions, smoke, or fire. Instruct the customer to keep the area around the unit clean.**

⚠ NOTE

- **Install the power supply and control wires for the indoor and outdoor units at least 3.5 feet away from televisions or radios to prevent image interference or noise. Depending on the radio waves, a distance of 3.5 feet may not be sufficient to eliminate the noise.**
- **Dismantling the unit, treatment of the refrigerant, oil and additional parts must be done in accordance with the relevant local, state, and national regulations.**
- **Do not use the following tools that are used with conventional refrigerants: gauge manifold, charge hose, gas leak detector, reverse flow check valve, refrigerant charge base, vacuum gauge, or refrigerant recovery equipment.**
- **If the conventional refrigerant and refrigerator oil are mixed in R410A, the refrigerant may deteriorate.**
- **This air conditioner is an appliance that should not be accessible to the general public.**
- **The wall thickness of field-installed pipes should be selected in accordance with the relevant local, state, and national regulations.**

⟨Safety Precaution⟩

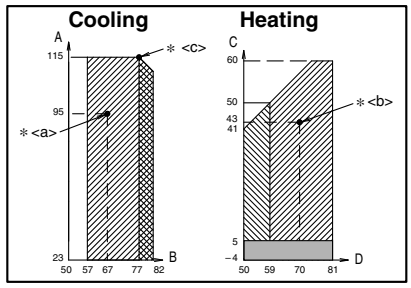
The PCI Data Station is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

2. INTRODUCTION

2-1 Standard operation limit

The figures below assume following operating conditions for indoor and outdoor units:

Equivalent pipe length ..... 25 ft.
Level difference ..... 0 ft.



A Outdoor temperature (°FDB)
B Indoor temperature (°FWB)
C Outdoor temperature (°FWB)
D Indoor temperature (°FDB)

Range for continuous operation
Range for pull down operation
Range for warming up operation
Range for operation

2-2 Technical specifications

(∗<a> and ∗<b> in the table indicate the operating condition (shown in the previous figure).)

Model		RZQ30PVJU9	RZQ36PVJU9 RZR36PVJU	RZQ42PVJU9 RZR42PVJU	Precaution
Refrigerant		R410A			
Power		208/230V 60Hz			
[FCQ] Ceiling mounted					
Cooling (MBh)		–	36.0	40.5	*<a>
Heating (MBh) (RZQ only)		–	39.5	41.5	*<b>
[FHQ] Ceiling suspended					
Cooling (MBh)		–	36.0	40.5	*<a>
Heating (MBh) (RZQ only)		–	37.5	39.5	*<b>
[FTQ] Air handling unit					
Cooling (MBh)		30.0	36.0	42.0	*<a>
Heating (MBh) (RZQ only)		34.0	40.0	47.0	*<b>
Dimensions H × W × D	(inch)	52-15/16 × 35-7/16 × 12-5/8			
Weight	(lb.)	283			
Connections					
Gas	(inch)	5/8			
Liquid	(inch)	3/8			

2-3 Electrical specifications

(*<c> in the table indicates the operating condition (shown in the previous figure).)

Model		RZQ30PVJU9	RZQ36PVJU9 RZR36PVJU	RZQ42PVJU9 RZR42PVJU	Precaution
Power					
Phase		~			
Frequency	(Hz)	60			
Voltage	(V)	208/230			
Voltage tolerance	(%)	±10			
Max. Overcurrent Protective device	(A)	30			
Min. Circuit Amps.	(A)	27.0			*<c>
Compressor					
Phase		3~			
Frequency	(Hz)	60			
Voltage	(V)	208/230			

2-4 Accessories

Confirm that the following accessories are supplied.

Clamp	Insulation tube		Others
	Large	Small	
(6 pcs.)	(1 pc.)	(1 pc.)	• Installation manual

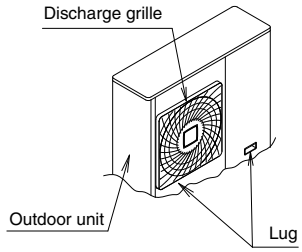
2-5 Main components

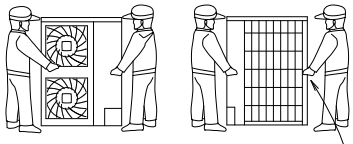
For main components and function of the main components, refer to the Engineering Data Book.

3. BEFORE INSTALLATION

<Bringing-in>

Bring in the outdoor unit slowly by holding the lugs provided on the left and right sides as shown in the figures below.
(Take care so that hands and objects do not touch the fin on the rear.)





(Front view) (Rear view)

If the suction hole area on the side of the casing is held, the casing may be deformed. Make sure to hold the corner.

◎ Make sure to use accessories and specified specification parts in the installation work.

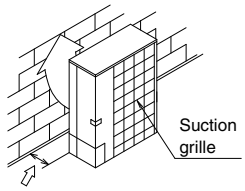
4. SELECTION OF INSTALLATION LOCATION

The refrigerant R410A itself is nontoxic, nonflammable and safe. If the refrigerant should leak however, its concentration may exceed the allowable limit depending on room size. Due to this it could be necessary to take measures against leakage. Refer to the chapter "Caution for refrigerant leaks".

(1) Select a proper location satisfying the following requirements with approval of the customer.
- Sufficient ventilation is secured.
- Adjacent houses are not annoyed.
- The foundation is strong enough to support the weight and withstand vibrations of the outdoor unit, and the location is safe and allows horizontal installation.
- The outdoor unit is exposed to rain as less as possible.
- The space for installation and servicing is secured around the outdoor unit.
- The indoor/outdoor piping length and wiring length are within the allowable range.

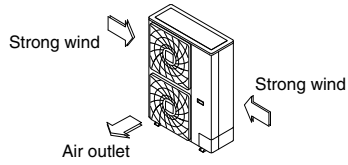
(2) When installing the outdoor unit in a location affected by strong wind, pay special attention to the following items.
- If strong wind whose velocity is 11 mph or more blows to the outdoor unit from the air outlet side, the air flow rate of the outdoor unit is reduced, the outlet air is sucked again (short-circuit), and the following effect may be caused:
  - The capacity is deteriorated.
  - The adhered frost increases during heating operation.
  - The operation is stopped by pressure rise.
- If excessive strong wind continuously blows from the air outlet side of the outdoor unit, the fan may rotate in the reverse direction at high speed, and lead to damage. Install the outdoor unit in reference to the following figures.

• Position the air outlet side toward the building wall, fence or windbreak screen.



(Secure the space for installation and servicing.)

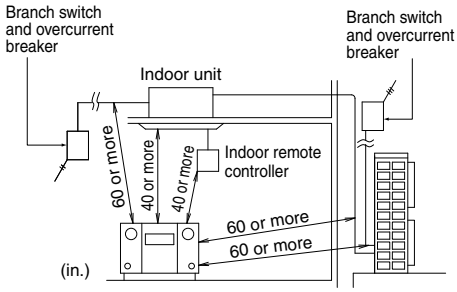
• Let the air outlet direction face be at right angles to the wind direction.



(3) When installing the outdoor unit in a location with heavy snowfall, pay special attention to the following items:
- Prepare strong foundation.
- Attach the snow hood (optional accessory).
- Remove the suction grill on the rear so that snow will not be accumulated in the rear fin.

(4) When there is a possibility of short-circuit depending on the ambient situation, use the wind direction adjusting plate (optional accessory).

(5) The inverter type air conditioner may cause noise in electric products.
When selecting an installation location, keep sufficient distance from the air conditioner unit and wiring to radios, personal computers, stereos, etc. as shown in the figure below. In areas with weak electric waves, keep a distance of 120 in. or more from the indoor remote controller, etc., put the power cables and connection cables in conduit tubes, and ground the conduit tubes.

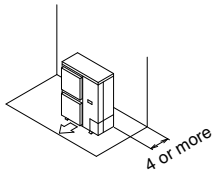


⚠ DANGER

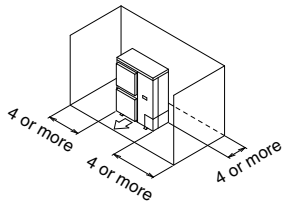
- Do not install unit in an area where flammable materials are present due to risk of explosion resulting in serious injury or death.
- Refrigerant is heavier than air and replaces oxygen. A massive leak could lead to oxygen depletion , especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.

Installation place (unit: inch)
〈Cautions on continuous installation〉
- The connection piping outlet direction in the continuous installation shown in the figures below is frontward or downward.
- When routing the piping rearward, secure space of 10 in. or more on the right side of the outdoor unit. (The unit of numeric values below is “inch”.)
- Make some space for wiring with conduit and servicing between the units.

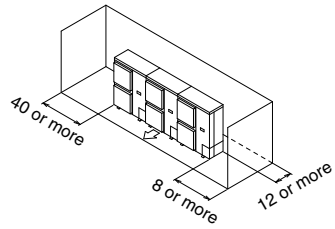
(A) When an obstruction is present on the air inlet side
- **When the upward area is open**
  (1)When one outdoor unit is installed individually
  - When an obstruction is present only on the air inlet side



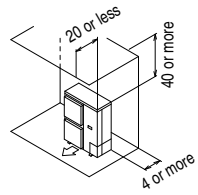
  - When an obstruction is present on the both sides



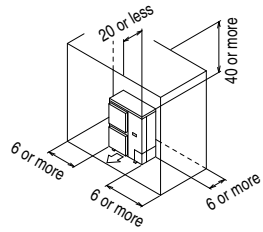
(2)When two or more outdoor units are installed side by side
- When an obstruction is present on the both sides



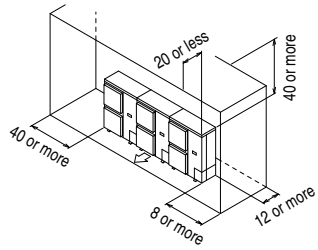
- **When an obstruction is present also in the upward area**
  (1)When one outdoor unit is installed individually
  - When an obstruction is present also on the air inlet side



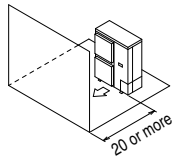
  - When an obstruction is present also on the air inlet side and both sides



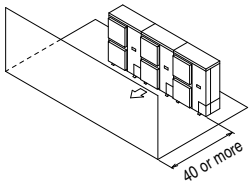
(2)When two or more outdoor units are installed side by side
- When an obstruction is present also on the air inlet side and both sides



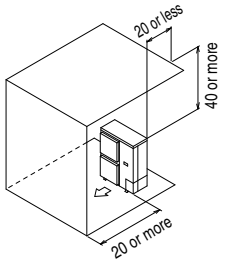
(B) When an obstruction is present on the air outlet side
- **When the upward area is open**
  (1)When one outdoor unit is installed individually



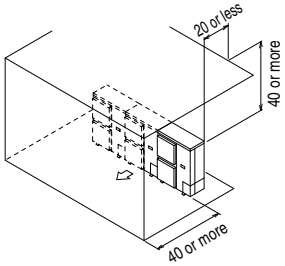
(2)When two or more outdoor units are installed side by side



- **When an obstruction is present also in the upward area**
  (1)When one outdoor unit is installed individually



(2)When two or more outdoor units are installed side by side

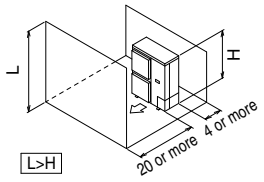


(C) When an obstruction is present on both the air inlet and air outlet sides

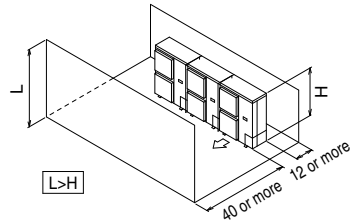
<Pattern 1>

When an obstruction on the air outlet side is higher than the outdoor unit (There is no restriction in the height of obstruction on the air inlet side.)

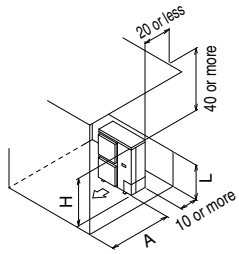
- **When the upward area is open**
  (1)When one outdoor unit is installed individually



(2)When two or more outdoor units are installed side by side



- **When an obstruction is present also in the upward area**
  (1)When one outdoor unit is installed individually



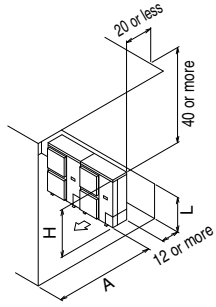
The dimensional relationship between H, L and A is as shown in the table below.

	L	A
L ≤ H	0 < L ≤ 1/2H	30
	1/2H < L ≤ H	40
H < L	**Install the frame to achieve "L ≤ H".**	

NOTE

- Close the area under the frame so that the outlet air does not bypass there.

(2)When only two outdoor units are installed side by side



The dimensional relationship between H, L and A is as shown in the table below.

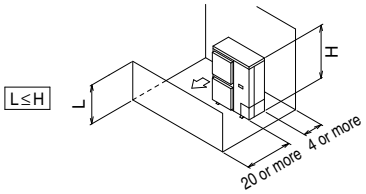
	L	A
L ≤ H	0 < L ≤ 1/2H	40
	1/2H < L ≤ H	50
H < L	**Install the frame to achieve "L ≤ H".**	

NOTE

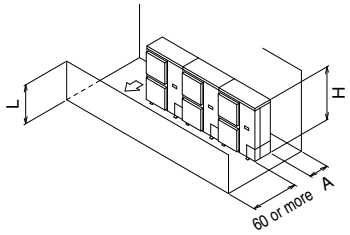
1. Close the area under the frame so that the outlet air does not bypass there.
2. Only two outdoor units can be installed side by side.

<Pattern 2>
When an obstruction on the air outlet side is lower than the outdoor unit (There is no restriction in the height of obstruction on the air inlet side.)

- **When the upward area is open**
  (1)When one outdoor unit is installed individually



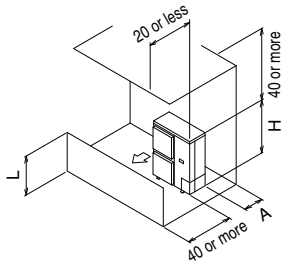
(2)When two or more outdoor units are installed side by side



The dimensional relationship between H, L and A is as shown in the table below.

L	A
0 < L ≤ 1/2H	10
1/2H < L ≤ H	12

- **When an obstruction is present also in the upward area**
  (1)When one outdoor unit is installed individually



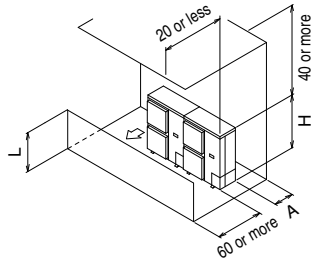
The dimensional relationship between H, L and A is as shown in the table below.

	L	A
L ≤ H	0 < L ≤ 1/2H	4
	1/2H < L ≤ H	8
H < L	**Install the frame to achieve "L ≤ H".**	

NOTE

- Close the area under the frame so that the outlet air does not bypass there.

(2)When only two outdoor units are installed side by side



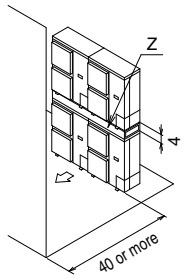
The dimensional relationship between H, L and A is as shown in the table below.

	L	A
L ≤ H	0 < L ≤ 1/2H	10
	1/2H < L ≤ H	12
H < L	**Install the frame to achieve "L ≤ H".**	

NOTE

1. Close the area under the frame so that the outlet air does not bypass there.
2. Only two outdoor units can be installed side by side.

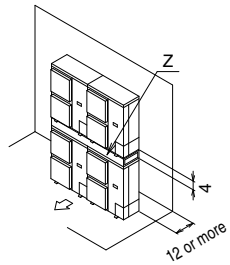
(D) When outdoor units are stacked
(1)When an obstruction is present on the air outlet side



NOTE

1. Only two outdoor units can be stacked.
2. About 4 in. is required as the drain piping size for the upper outdoor unit.
3. Close the area Z (gap between the upper outdoor unit and the lower outdoor unit) so that the outlet air does not bypass there.

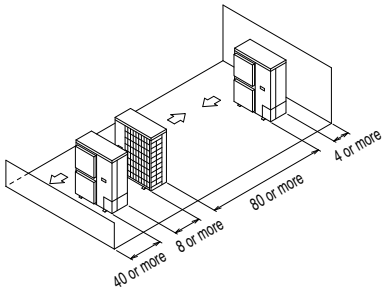
(2)When an obstruction is present on the air inlet side



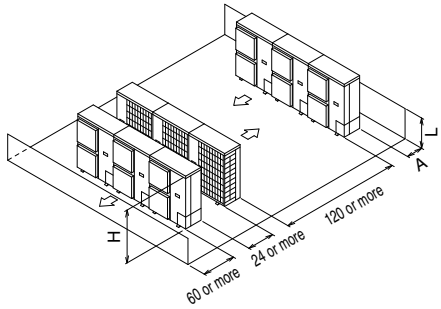
NOTE

1. Only two outdoor units can be stacked.
2. About 4 in. is required as the drain piping size for the upper outdoor unit.
3. Close the area Z (gap between the upper outdoor unit and the lower outdoor unit) so that the outlet air does not bypass there.

(E) When outdoor units are installed in rows (on the rooftop, etc.)
(1)When one outdoor unit is installed in each row



(2)When two or more outdoor units are installed side by side

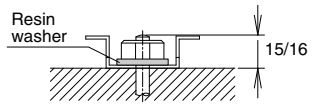


The dimensional relationship between H, L and A is as shown in the table below.

	L	A
L ≤ H	0 < L ≤ 1/2H	10
	1/2H < L ≤ H	12
H < L	**Installation is not allowed.**	

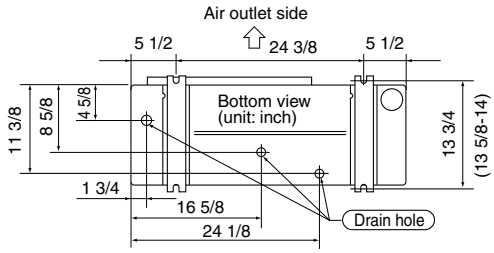
5. CAUTIONS ON INSTALLATION

- Before installation, confirm the strength and levelness of the foundation so that vibrations and noise are not generated.
- Fix the outdoor unit securely on a rigid base with foundation bolts as shown in the foundation drawing below.
  (Prepare 4 sets of commercially available M12-type or equivalent foundation bolts, nuts and washers.)
- Use resin washers to prevent the paint from being scratched off and rusting.
- The foundation bolts should be protruded by 15/16 in.
  (Refer to figure)



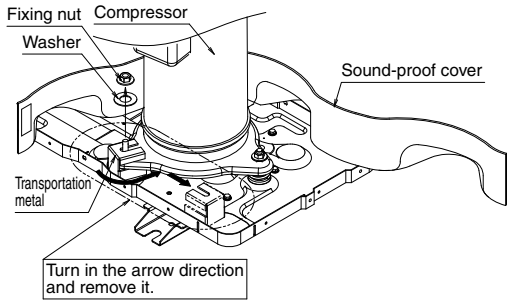
⟨⟨Drain treatment⟩⟩

- In a location where drain from the outdoor unit may cause troubles (for example, where drainage may splash on general passersby), perform the drain piping work using the drain plug (optional).
- For drain treatment, space of at least 4 in. is required under the bottom frame of the outdoor unit.
- In the drain piping work, make sure that drainage is discharged securely.
  (When routing the piping downward, check for water leakage.)



Transportation metal removal procedure

- A transportation metal in yellow and a washer are provided on the leg of the compressor for protecting the unit during transport. Remove them as described below.



(1) Open the sound-proof cover as shown in the above figure.
At this time, do not pull the sound-proof cover, and do not remove it from the compressor.
(2) Remove the fixing nut.
(3) Remove the transportation metal and the washer as shown in the above figure.
(4) Return and tighten the fixing nut again.
(5) Return the sound-proof cover to achieve the former status.

⚠ CAUTION

- If the unit is operated with the transportation metal attached, abnormal vibration or sound may be generated.

6. REFRIGERANT PIPING WORK

⚠ CAUTION

<To piping technician>

- **Make sure to open the stop valves after finishing the piping work. (Refer to the table shown in " 6-7 Additional refrigerant charge".)**
  (Operating the air conditioner with the stop valve shut may damage the compressor.)
- Use R410A to add refrigerant. (The R410A refrigerant cylinder has a pink stripe painted around it.)
  All field piping must be installed by a licensed refrigeration technician and must comply with relevant local and national regulations.
- **BRAZING REFRIGERANT PIPING**
  Do not use flux when brazing copper-to copper refrigerant piping. (Particularly for the HFC refrigerant piping) Therefore, use the phosphor copper brazing filler metal (BCuP) which does not require flux.
  (Flux has an extremely negative effect on refrigerant piping systems. For instance, if chlorine based flux is used, it will cause pipe corrosion. Flux containing fluorine will damage refrigerant oil.)

NOTE

- Maximum piping length between the outdoor and indoor unit is 230ft.
- Installation tools:
  Make sure to use installation tools (gauge manifold charge hose, etc.) that are exclusively used for R410A installations to withstand the pressure and to prevent foreign materials (e.g. mineral oils such as SUNISO and moisture) from mixing into the system.
  (The screw specifications differ for R410A and R407C.)
  Vacuum pump (use a 2-stage vacuum pump with a non-return valve):
  1. Make sure the pump oil does not flow oppositely into the system while the pump is not working.
  2. Use a vacuum pump which can evacuate to –14.6 psi.

6-1 Selection of piping material

1. Foreign materials inside pipes (including oils for fabrication) must be 0.14gr/10ft. or less.
2. Use the following material specification for refrigerant piping:
   - construction material: Phosphoric acid deoxidized seamless copper for refrigerant.

6-2 Protection of piping

- Protect the piping to prevent moisture and dusts from coming into the piping.
- Especially, pay attention when passing the piping through a hole or connecting the end of piping to the outdoor.

Location	Working period	Protection method
Outdoor	1 month or more	Pinch pipes
	Less than 1 month	Pinch or tape pipes
Indoor	Regardless of period	

6-3 Piping connection

- **For handling of stop valves, refer to "Stop valve operation method" in "6-7 Additional refrigerant charge".**
- **Only use the flare nuts attached to the stop valves. Using different flare nuts may cause the refrigerant to leak.**
- **Be sure to perform a nitrogen blow when brazing.**

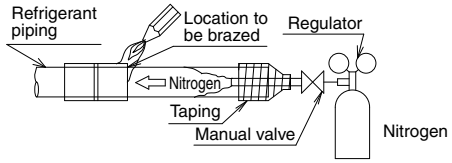
(Brazing without performing nitrogen replacement or releasing nitrogen into the piping will create large quantities of oxidized film inside the pipes, adversely affecting valves and compressor in the refrigerating system and preventing normal operation.)

DANGER

- Use of oxygen could cause an explosion resulting in severe injury or death. Only use nitrogen gas.
- Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan heater, stove or cooking device. Exposure to this gas could cause severe injury or death.

NOTE

- When brazing with blowing nitrogen, set the nitrogen pressure to 2.9 psi or less by using a pressure reducing valve.



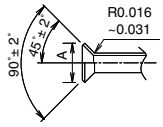
CAUTION

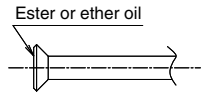
- Do not use anti-oxidants when brazing.
  Residue can clog pipes and break the unit.

◎ Do not let any refrigerant other than the specified refrigerant enter the refrigerant system.
◎ Do not let any gas such as air enter the refrigerant system.

〈Precautions when connecting the piping〉

- See the following table for flare dimensions.
- When connecting the flare nuts, apply refrigerant oil to the inside and outside of the flares and turn them three or four times at first. (Use ester oil or ether oil.)
- See the following table for tightening torque. (Applying too much torque may cause the flares to crack.)
- After connecting all the piping perform a gas leak check by using nitrogen.

Pipe size	Tightening torque (ft·lbf)	Flare dimension A (in.)	Flare shape (in.)
ϕ3/8"	24.1 - 29.4	0.504 - 0.520	
ϕ5/8"	45.6-55.6	0.760 - 0.776	



- If you are obliged to install the unit without a torque wrench, you may follow the installation method mentioned below.
  After the work is finished, make sure to check that there is no gas leak.
- When you keep on tightening the flare nut with a spanner, there is a point where the tightening torque suddenly increases.
  From that position, further tighten the flare nut the angle shown below.

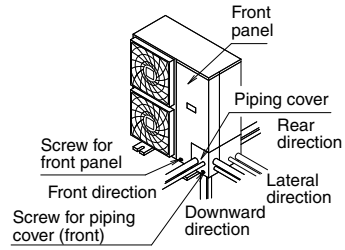
Pipe size	Tightening angle (Guideline)	Recommended arm length of tool (in.)
ϕ 3/8"	60°~90°	Approx. 7 7/8
ϕ 5/8"	30°~60°	Approx. 11 13/16

Disposal requirements

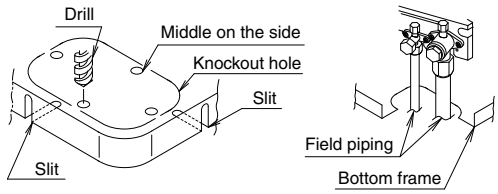
Dismantling of the unit, treatment of the refrigerant, oil and eventual other parts should be comply the relevant local and national regulations.

6-4 Refrigerant piping work procedure

◎ The field piping can be connected in four directions.



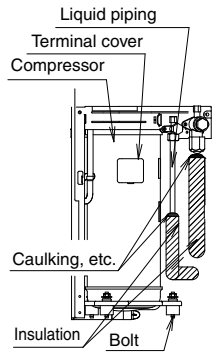
◎ When connecting the piping downward, remove the knockout hole by making four holes in the middle on the each side of the knockout hole with a drill.



Then cut out the corner of the bottom frame along the slits (in two positions) by using a hacksaw.
◎ After removing the parts, it is recommended to apply repair paint on the edges, to prevent rusting.

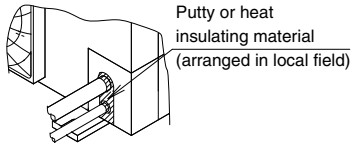
Cautions on connecting the connection piping

- Be careful not to let the field piping come into contact with the compressor terminal cover.
  Adjust the height of the insulation material on liquid pipe when it has the possibility of getting in contact with the terminal. Also make sure that the field piping does not touch the mounting bolt of the compressor.
- When it is expected that water condensed in the stop valve will reach the indoor unit through the gap between the heat insulating material and the piping (for example, when the outdoor unit is installed in a higher position than the indoor unit), take proper action such as caulking the connection area.



[Measures to prevent invasion of small creatures and litter]

- Block all gaps in the piping penetration areas with putty or heat insulating material (arranged in the local field) as shown in the figure below.
  (If small creatures such as insects or litter enter the outdoor unit, a short-circuit may be caused inside the control box.)



6-5 Heat insulation of piping

- Make sure to insulate the field piping (on both the liquid line and gas line) and refrigerant branching kit.
  (If they are not insulated, water leakage may be caused.)

  Be sure to use insulation that is designed for use with HVAC systems.

- Reinforce the refrigerant piping according to the installation environment. If it is not reinforced, condensate may form on the surface of the insulation.

⚠ WARNING

- Make sure to insulate the field piping up to the piping connection area inside the unit. If the piping is exposed, dew condensation and burn by contact may be caused.

6-6 Airtight test and vacuum drying

The unit has been checked for leaks by the manufacturer.
Confirm that the valves are firmly closed before airtight test or vacuum-drying.
To prevent entry of any impurities and insure sufficient pressure resistance, always use the special tools dedicated for R410A.

Perform the following inspections securely after the piping work.

- **Airtight test** - Make sure to use nitrogen gas. (For the service port position, refer to the figure in **"Stop valve operation method"**.)
  [Procedure] Pressurize the air conditioner from the liquid pipe and gas pipe up to 450 psi (Make sure not to exceed 450 psi). When the pressure does not drop for 24 hours, the piping work shall be accepted.
  If the pressure drops, check for leakage positions. (Confirm that there is no leakage, then release nitrogen.)
- **Vacuum drying** - Use a vacuum pump which can evacuate up to –14.6 psi or less.
  [Procedure] Operate the vacuum pump for evacuation for 2 hours or more using both liquid pipe and gas pipe until the vacuum pressure reaches –14.6 psi or less. Leave the air conditioner at –14.6 psi or less for 1 hour or more, and confirm that the vacuum pressure indicated by the vacuum gage does not increase.
  (If the vacuum pressure increases, the system may contain moisture or have leakage.)

If there is a possibility of moisture remaining in the piping (for example, when there is a possibility of dew condensation inside the piping because the piping work was performed in the rainy season or over a long period of time, or when rainwater may have entered the piping during the work)
Perform evacuation described above for 2 hours (vacuum drying), pressurize the air conditioner up to 7 psi (vacuum break) with nitrogen gas, then evacuate the air conditioner using the vacuum pump for 1 hour to achieve –14.6 psi or less (vacuum drying).
(If the vacuum pressure does not reach –14.6 psi or less even after evacuation for 2 hours or more, repeat vacuum break and vacuum drying.) Leave the air conditioner in the vacuum status for 1 hour or more, and confirm that the vacuum pressure indicated by the vacuum gauge does not increase.

6-7 Additional refrigerant charge

⚠ WARNING

- To avoid injury always use protective gloves and eye protection when charging refrigerant.
- To avoid injury do not charge with unsuitable substances. Use only the appropriate refrigerant.

⚠ NOTE

- Refrigerant cannot be charged until field wiring has been completed.
  Refrigerant may only be charged after performing the airtight test and the vacuum drying (see above).
  When charging refrigerant into the system, take care that its maximum allowable charge is never exceeded, in view of the danger of liquid hammer.
  Refrigerant containers shall be opened slowly.
  To avoid compressor breakdown, do not charge the refrigerant more than the specified amount to raise the condensing pressure.

- This outdoor unit is factory charged with refrigerant.
- Charge the additional refrigerant calculated by the formula below.

Additional charging amount (lb.)	=	Liquid piping length × 0.036 (ft.)×0.036

Record the additional amount to the label stuck on the back of front panel.

- Charge the refrigerant to the liquid pipe in its liquid state. Since R410A is a mixed refrigerant, its composition changes if charged in a state of gas and normal system operation would no longer be assured.
- Before filling, check whether the tank has a siphon attached or not.

  How to fill a tank with a siphon attached.

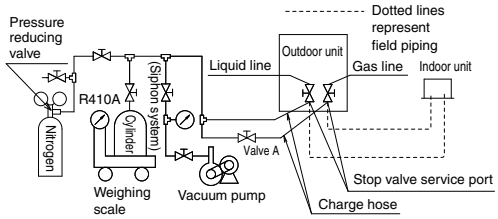
  Fill with the tank upright.
  (There is a siphon tube inside, so there is no need to turn the tank upside-down.)

  Other ways of filling the tank

  Fill with the tank upside-down.

- After the vacuum drying is finished, charge the additional refrigerant in its liquid state through the liquid stop valve service port.
  Taking into account following instructions:
  1. Check that gas and liquid stop valves are closed.
  2. Charge the specified amount of refrigerant.

- If the outdoor unit is not in operation and the total amount cannot be charged, follow the procedures for additional refrigerant charge shown below.
- Make sure to use installation tools you exclusively use on R410A installations to withstand the pressure and to prevent foreign materials from mixing into the system.
- Procedures for charging additional refrigerant.



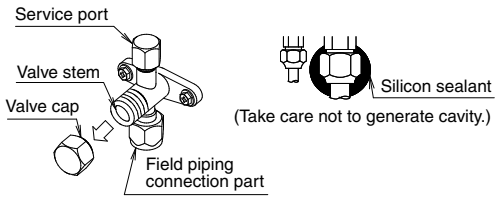
See the "Cautions on service" label on the back of the front panel for the settings for operation after replenishing refrigerant.

1. Open the gas line stop valve (leaving the liquid line stop valve, valve A in the diagram above, close) and perform the operation to add the refrigerant.
2. Once the appropriate amount of refrigerant is in, press the confirmation button (BS3) on the outdoor unit PC board (A1P), and stop operation.
3. Open the stop valves quickly (both liquid and gas line valves). (This must be done quickly to avoid the possibility that the pipe might burst.)

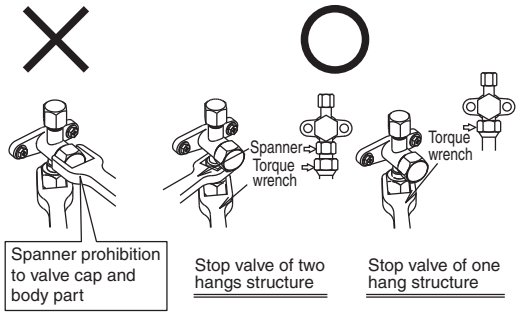
Stop valve operation method

Cautions on handling the stop valve

- The figure below shows the name of each part required in handling the stop valve. At the time of shipment, the stop valve is closed.



- If only a torque wrench is used to loosen or tighten the flare nut, the side plate may be distorted. Make sure to fix the stop valve with a spanner, then loosen or tighten the flare nut with a torque wrench.


Spanner
Torque wrench
Torque wrench
Spanner prohibition to valve cap and body part
Stop valve of two hangs structure
Stop valve of one hang structure

- When it is expected that the operating pressure will be low (for example, when cooling will be performed while the outside air temperature is low), seal sufficiently the flare nut in the stop valve on the gas line with silicon sealant to prevent freezing.

[Stop valve operation method]
Prepare hexagon wrenches (whose size is 4 mm and 6 mm).
How to open the stop valve

1. Insert a hexagon wrench into the valve stem, and turn the valve stem counterclockwise.
2. When the valve stem cannot be turned any more, stop turning. Now, the valve is open.

How to close the stop valve

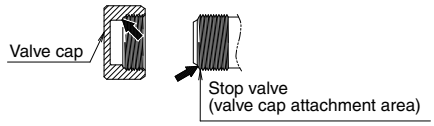
1. Insert a hexagon wrench into the valve stem, and turn the valve stem clockwise.
2. When the valve stem cannot be turned any more, stop turning. Now, the valve is closed.

Opening direction **Opening direction**

<Liquid line> <Gas line>

Cautions on handling the valve cap

- The valve is sealed in the arrow area. Take care not to damage the arrow area.



- After handling the valve, make sure to tighten the valve cap securely.

Liquid line	Gas line
10.0~12.2 ft·lbf	16.6~20.3 ft·lbf

Cautions on handling the service port

- Use charge hose equipped with push in the work.
- After the work, make sure to tighten the valve cap securely. Tightening torque.....8.5~10.3 ft·lbf

7. ELECTRIC WIRING WORK

⚠ DANGER

- Do not ground units to water pipes, telephone wires or lightning rods because incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.

⚠ WARNING

- Disconnect all power to unit to avoid possible electric shock during installation.
- Use only specified wire and connect wires to terminals tightly. Be careful that wires do not place external stress on terminals. Keep wires in neat order so as to not to obstruct other equipment. Incomplete connections could result in overheating, and in worse cases, electric shock or fire.
  For the details, refer to **"7-3 Power supply wiring connection procedure"**.

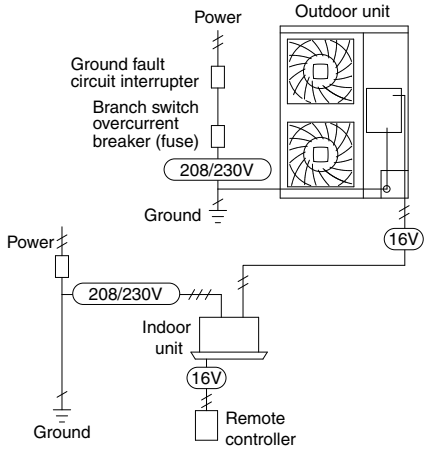
⚠ CAUTION

<To electrician>

- Do not operate the air conditioner until the refrigerant piping work is completed.
  (Operating the air conditioner before the refrigerant piping work is completed may damage the compressor.)
- Install a ground fault circuit interrupter.
  (The inverter is provided in the air conditioner. In order to prevent malfunction of the ground fault circuit interrupter itself, use a breaker resistant to higher harmonics.)

- Electricians having sufficient knowledge should perform the electrical wiring work.
  All wiring must comply with local electrical codes and National Electrical Code (NEC).
- Perform the electric wiring work in accordance with the "wiring diagram label".
  Make sure to turn OFF the branch switch and overcurrent breaker before starting the work.
- Perform grounding to the indoor unit and outdoor unit.
- Use only copper wires.
- Make sure to turn the power off before starting the electric wiring work.
  Do not turn ON any switch until the work is completed.
- The outdoor unit has an inverter which generates noise and charges the outer casing with the leakage current. The outdoor unit should be grounded so that the effect of the generated noise on other equipment can be reduced, and that the outer casing can be discharged.
- As this unit is equipped with an inverter, installing a phase advancing capacitor will not only reduce the power factor improvement factor, but may also cause the capacitor to overheat due to high-frequency waves. Therefore, never install a phase advancing capacitor.
- Never push excessive electric wires into the units.
- Protect electric wires with conduit tubes or vinyl tubes so that they will not be damaged by edges of knockout holes.
- Fix electric wires with clamps as accessories so that they will not come to contact with pipes and stop valves.
  (Refer to **"7-3 Power supply wiring connection procedure"**.)

7-1 Connection example of whole system wiring

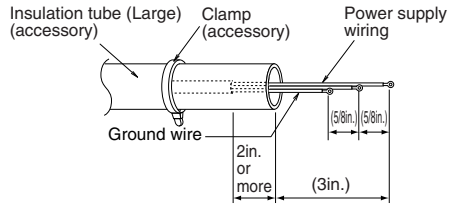


7-2 Routing power supply wiring and transmission wiring

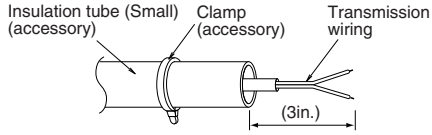
Let the power supply wiring and transmission wiring with a conduit pass through one of the knockout holes on the front or side piping cover, and let the transmission wiring with a conduit pass through another knockout hole.

- For protection from uninsulated live parts, thread the power supply wiring and the transmission wiring through the included insulation tube and secure it with the included clamp.

<Power supply wiring>

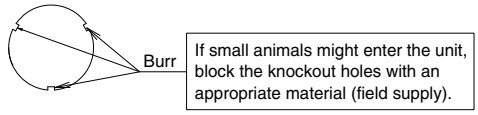


<Transmission wiring>



Precautions knockout holes

- Open the knockout holes with a hammer or the like.
- After knocking out the holes, we recommend you remove burrs in the knockout holes and paint the edges and areas around the edges using the repair paint to prevent rusting.
- When passing wiring through knockout holes, make sure there are no burrs, and protect the wiring with protective tape.



⚠ CAUTION

- Use conduit for both the power supply wiring and transmission wiring.
- Outside the unit, make sure to keep the wirings 5 inch away. Otherwise, the outdoor unit may be affected by electrical noise (external noise), and malfunction or fail.
- Be sure to connect the power supply wiring to the terminal block and secure it as described in "7-3 Power supply wiring connection procedure".
- Fix the wiring between the units in accordance with "7-4 Transmission wiring connection procedure".
- Secure the wirings with the clamps (accessory) so that do not touch the piping.
- Make sure the wirings will not be pinched by the front panel, and close the panel firmly.
- Route the conduit along the unit by using a elbow socket and so on to prevent it from being stepped on.

7-3 Power supply wiring connection procedure

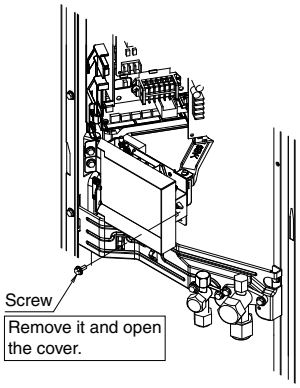
⚠ WARNING

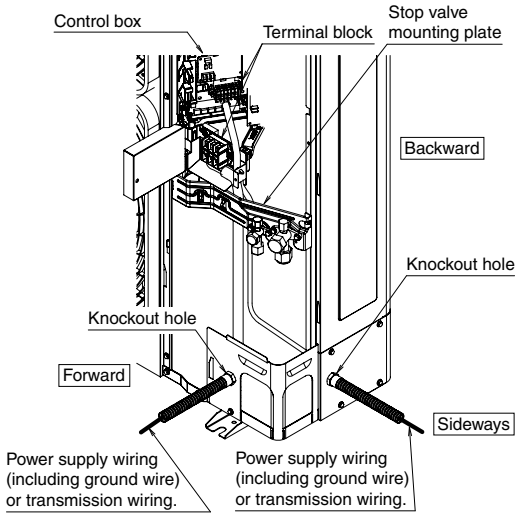
- Never connect power supply wiring to the terminal block for remote controller wiring as this could damage the entire system.

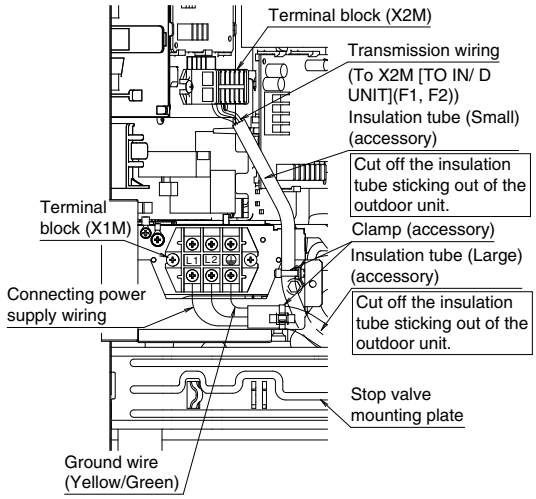
Install a ground fault circuit interrupter.

- It is obliged to install a ground fault circuit interrupter to prevent electric shock and fire accident.

Model	Phase and frequency	Voltage	Max. Overcurrent Protective device	Min. Circuit Amps.
RZQ30PVJU9	~ 60Hz	208/230V	30A	27A
RZQ36PVJU9 RZR36PVJU				
RZQ42PVJU9 RZR42PVJU				





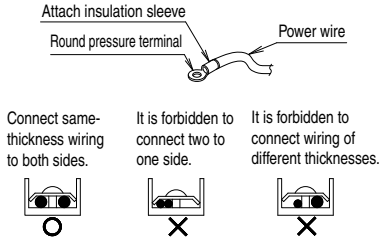

Terminal block (X2M)
Transmission wiring (To X2M [TO IN/ D UNIT](F1, F2))
Insulation tube (Small) (accessory)
Cut off the insulation tube sticking out of the outdoor unit.
Terminal block (X1M)
Clamp (accessory)
Insulation tube (Large) (accessory)
Connecting power supply wiring
Cut off the insulation tube sticking out of the outdoor unit.
Stop valve mounting plate
Ground wire (Yellow/Green)

⚠ CAUTION

- After finishing the electric wiring work, confirm that all the wirings are connected securely.

⟨⟨Precautions when laying power wiring⟩⟩

- Two electric wires of different thickness cannot be connected to the power terminal block.
  (Slack in the electric wires may generate abnormal heat.)
- Use round pressure terminals with insulting sleeve for connection to the power terminal block.
  If such terminals are not available for unavoidable reasons, connect an electric wire of the same thickness to each side as shown in the figure.



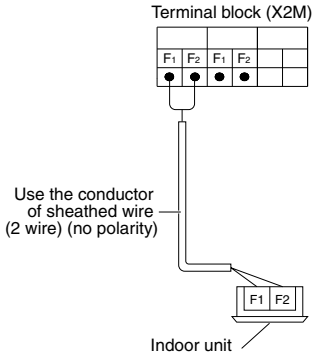
Make sure to observe the following items. If they are not observed, abnormal heat may be generated by slack in electric wires, etc.

- For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal board.
- Use an appropriate screwdriver for tightening the terminal screws. A screwdriver with a small head will strip the head and make proper tightening impossible.
- Over-tightening the terminal screws may break them.
- See the table below for tightening torque for the terminal screws.

Tightening torque (ft·lbf)		
M5	(Power supply and ground terminal block)	1.76 ~ 2.15
M4	(Shielded ground)	0.87 ~ 1.06
M3.5	(Transmission wiring terminal block)	0.58 ~ 0.72

7-4 Transmission wiring connection procedure

- **If an excessive force is applied while connecting a cable to the terminal block on the PC board, the PC board may be damaged.**



CAUTION

- For low-noise operation, it is necessary to install the optional "External control adaptor for outdoor unit".
  For details, see the installation manual attached to the adaptor.

Caution on the wiring length between units

Make sure to observe the restrictions below. If they are not observed, transmission error may occur.

Maximum wiring length: 3280 ft.

Cautions on the wiring between units

- Never connect 208/230V to the terminal block for the transmission wiring.
  Doing so will break the entire system.
- The transmission wiring from the indoor unit must be connected to the F1/F2 (TO IN/D UNIT) terminals on the PC board in the outdoor unit.

* Make sure to use sheathed two-core cables of AWG18-16 in the wiring shown above.
* **All cables used in the wiring between the units should be procured on the site.**

8. CHECKS AFTER COMPLETION OF WORK

After completing the work, make sure to confirm the following items:

1. Connection of drain piping and removal of transportation metal:
   Refer to **"5. CAUTIONS ON INSTALLATION"**.
2. Connection of power supply wiring and tightening of screws:
   Refer to **"7-3 Power supply wiring connection procedure"**.
3. Connection of transmission wiring and tightening of screws:
   Refer to **"7-4 Transmission wiring connection procedure"**.
4. Freezing connection of refrigerant piping
   Refer to **"6. REFRIGERANT PIPING WORK"**.
5. Piping size and heat insulation:
   Refer to **"6-1 Selection of piping material"**, **"6-5 Heat insulation of piping"**.
6. Check of stop valve:
   Confirm that the stop valve is open on both the liquid line and gas line.
7. Record of amount of additional refrigerant:
   Record the amount on the label stuck on the back of the front panel.
8. Measurement of insulation in main power circuit:
   - Use the megatester for 500 V.
   - Do not use any megatester for low voltage electric circuits except 230 V.
     (Wiring between the outdoor unit and the indoor unit)

CAUTION

<To piping technician>

- Make sure to open the stop valve after finishing the piping work.
  (Operating the air conditioner with the stop valve shut may damage the compressor.)

9. TEST RUN PROCEDURE

A crankcase heater is mounted for smooth startup. Make sure to turn on the power 6 hours before starting operation for supplying the power to the crankcase heater.

WARNING

- Make sure to close the front panel before leaving the outdoor unit in the power ON status.
- To avoid injury, always make sure that the circuit breaker on the power supply panel of the installation is switched off before doing any work.

Cautions before turning on the power

- **Put the insulating cover securely onto the control box.**
- **After turning on the power, check the settings and LED indicators on the PC board (A2P) in the outdoor unit through the opening of the insulating cover.**

9-1 Power on and check operation

- Make sure to perform the check operation after installation. (If the air conditioner is operated using the indoor remote controller without performing the check operation, the malfunction code "U3" is displayed in the indoor remote controller, and normal operation is disabled.)
- In the check operation, the status of the outdoor unit is checked, and incorrect wiring is checked for.

(1) • Close the front panel of the outdoor unit.
• Turn ON the power to the outdoor unit and indoor unit.

⚠ **Caution** Make sure to turn on the power 6 hours before starting operation for supplying the power to the crankcase heater.

(2) • Open the front panel of the outdoor unit.
• Check the LED on the PC board (A1P and A2P) in the outdoor unit to see if the data transmission is performed normally.

The power is supplied to the outdoor unit. Take due care during the work to prevent electric shock.

	A1P	A2P						
LED display (Default status before delivery)	SERVICE MONITOR	MODE	TEST/HWL	IND	MASTER	SLAVE	L.N.O.P.	DEMAND
	HAP	**H1P**	**H2P**	**H3P**	**H4P**	**H5P**	**H6P**	**H7P**
Outdoor unit installed	◑	●	●	○	●	●	●	●

LED display: ● OFF ○ ON ◑ Blinking

(3) • When performing the low-noise operation (L.N.O.P.) or demand (DEMAND) operation upon request from the customer, perform the setting using the pushbutton switches (BS1 to BS5) on the PC board (A2P) in the outdoor unit.
• Press each pushbutton switch from the opening of the insulation cover. (Do not remove the insulation cover.)

• The power is supplied to the outdoor unit. Take due care during the work to prevent electric shock.
• Before using the pushbutton switches (BS1 to BS5) for setting, confirm that the microcomputer (SERVICE) monitor is lit.
• For the setting method, refer to the [Cautions on service] label attached on the back of the front panel of the outdoor unit. (Make sure to write the contents of setting on the [Cautions on service] label.)

(4) Confirm that the stop valves are open on both the liquid and gas lines. If they are closed, open them.

⚠ **Caution** Do not leave any stop valve closed. Otherwise the compressor will fail.

(5) Press and hold the test run button (BS4) for 5 seconds or more to start the check operation.
For the details, refer to the **Check operation procedure** on the [Cautions on service] label.

• When leaving the outdoor unit during the check operation for unavoidable reasons, ask another installation worker to watch the outdoor unit, or close the front panel.
• The system operates the check operation for about 15 minutes (30 minutes maximum), then stops automatically.
The system can start normal operation about 5 minutes after the check operation if the remote controller does not display any malfunction code.
• During the check operation, the status under execution is indicated on the remote controller.

(6) After the check operation, make sure to close the front panel of the outdoor unit.

<Cautions on check operation>

- If the air conditioner is started within about 12 minutes after the power of the indoor/outdoor unit is turned on, the H2P indicator lights and the compressor does not run.
  Confirm that the LED status is as shown in the table in (2) in **"9-1 Power on and check operation"** before starting the air conditioner.
- The air conditioner may require about 10 minutes maximum until it can start the compressor after start of operation.
  This period of time is required to homogenize the refrigerant status, and does not indicate any failure.
- The check operation does not provide any means of checking the indoor unit individually. For that purpose, perform the normal operation using the remote controller after finishing the check operation.
- The check operation is not available in any other mode such as the recovery mode.
- Before running a check on the unit, changing the indoor remote controller settings might cause the error code "UF" to be displayed and prevent a proper check to be run.

9-2 Checks in normal operation

- After finishing the check operation, operate the air conditioner normally. (Heating operation is only available for RZQ-P models.) (Heating is not available if the outside air temperature is 75 °F or more. Refer to the operation manual supplied together with the unit.)
- Confirm that the indoor and outdoor units are operating normally. (If a knocking sound is heard in the liquid compression of the compressor, stop the air conditioner immediately and energize the crankcase heater for a sufficient period of time, then start the operation again.)
- Run the indoor unit one by one in turn, and confirm that the corresponding outdoor unit is running.
- Check to see if cold (or hot) air is coming out of the indoor unit.
- Press the fan direction button and fan speed control button on the remote controller to see if the fan is operating normally.

<Cautions for normal operation check>

- Once stopped, the compressor will not start for about 5 minutes even if the **"ON/OFF"** button on the remote controller is pressed.
- When the system operation is stopped by the remote control, the outdoor unit may continue to operate for a further 3 minutes.
- If the system has not undergone the check operation by the test run button since it was first installed, a malfunction code "U3" is displayed.
  In this case, perform the check operation by referring to **"9-1 Power on and check operation"**.

When a malfunction code is displayed in the remote controller

(Check a malfunction code in the remote controller connected to the indoor unit.)

Malfunction code	Cause	Solution
E3	The stop valves in the outdoor unit remain closed.	Open the stop valve on both the gas and liquid lines.
	The refrigerant is overcharged.	Calculate again the required amount of refrigerant to be charged based on the piping length, recover the refrigerant using the refrigerant recovery device, then achieve proper amount of refrigerant.
E4 F3	The stop valves in the outdoor unit remain closed.	Open the stop valve on both the gas side and liquid side.
	The operation mode on the remote controller was changed before the check operation.	Set the operation mode on all indoor unit remote controllers to "cooling."
	The refrigerant is insufficient.	• Check whether additional refrigerant charge has been finished correctly. • Calculate again the required amount of refrigerant to be charged based on the piping length, then charge additionally proper amount of refrigerant.
F6	The refrigerant is overcharged.	Calculate again the required amount of refrigerant to be charged based on the piping length, recover the refrigerant using the refrigerant recovery device, then achieve proper amount of refrigerant.
U3	The check operation has not performed.	Perform the check operation.
U4	The power is not supplied to the outdoor unit.	Connect correctly the power supply wiring of the outdoor unit.
UA	Improper type of indoor unit is connected.	Check the type of indoor unit currently connected. If it is not proper, replace it with proper one.
UF	The stop valves in the outdoor unit remain closed.	Open the stop valve on both the gas and liquid lines.
	The piping and wiring of the indoor unit are not connected correctly to the outdoor unit.	Confirm that the piping and wiring of the indoor unit are connected correctly to the outdoor unit.
	The operation mode on the remote controller was changed before the check operation.	Set the operation mode on indoor unit remote controller to "cooling."
UH	The transmission wiring is not connected correctly.	Connect correctly the transmission wiring to the F1 and F2 (TO IN/D UNIT) terminals on the PC board (A1P) in the outdoor unit.

When nothing is displayed in the remote controller

- There might be a problem with the connection or transmission between the indoor unit and the remote controller. Check connections, and check for wire breakage.

⚠ CAUTION

<To piping technician>
<To electrician>

- **After finishing the test run and before using the unit by customer, confirm that the front panel and screws are attached securely to the unit.**

10. CAUTION FOR REFRIGERANT LEAKS

⚠ DANGER

- Refrigerant gas is heavier than air and replaces oxygen. A massive leak could lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.

(Points to note in connection with refrigerant leaks)

Introduction

The installer and system specialist shall secure safety against leakage according to local regulations or standards. The following standards may be applicable if local regulations are not available.

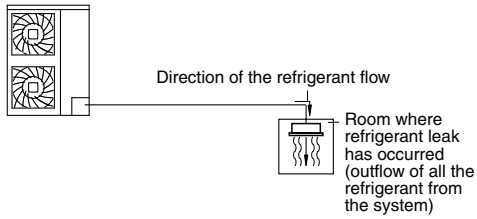
The Split System, like other air conditioning systems, uses R410A as refrigerant. R410A itself is an entirely safe non-toxic, non-combustible refrigerant. Nevertheless care must be taken to ensure that air conditioning facilities are installed in a room which is sufficiently large. This assures that the maximum concentration level of refrigerant gas is not exceeded, in the unlikely event of major leak in the system and this in accordance to the local applicable regulations and standards.

Maximum concentration level

The maximum charge of refrigerant and the calculation of the maximum concentration of refrigerant is directly related to the humanly occupied space in to which it could leak.

The unit of measurement of the concentration is lb./ft^3 (the weight in lb. of the refrigerant gas in 1ft^3 volume of the occupied space).

Compliance to the local applicable regulations and standards for the maximum allowable concentration level is required.


Direction of the refrigerant flow
Room where refrigerant leak has occurred (outflow of all the refrigerant from the system)

Pay a special attention to the place, such as a basement, etc. where refrigerant can stay, since refrigerant is heavier than air.

Procedure for checking maximum concentration

Check the maximum concentration level in accordance with steps 1 to 4 below and take whatever action is necessary to comply.

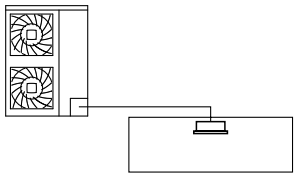
1. Calculate the amount of refrigerant (lb.) charged to each system separately.

amount of refrigerant in the unit (amount of refrigerant with which the system is charged before leaving the factory)	+	additional charging amount (amount of refrigerant added locally in accordance with the length or diameter of the refrigerant piping)	=	total amount of refrigerant (lb.) in the system

NOTE

- Where a single refrigerant facility is divided into 2 entirely independent refrigerant systems then use the amount of refrigerant with which each separate system is charged.

2. Calculate a room volume (ft^3)



3. Calculate the refrigerant concentration by using the results of the calculations in steps 1 and 2 above.

$$\frac{\text{total amount of refrigerant in the system}}{\text{volume } (ft^3) \text{ of the room in which there is an indoor unit installed}} \leq \text{maximum concentration level } (lb./ft^3)$$

4. Deal with the situations where the result exceeds the maximum concentration level.
Where the installation of a facility results in a concentration in excess of the maximum concentration level then it will be necessary to revise the system.
Please consult your dealer.

Warning

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Ask a qualified installer or contractor to install this product. Do not try to install the product yourself. Improper installation can result in water or refrigerant leakage, electrical shock, fire, or explosion.

Use only those parts and accessories supplied or specified by Daikin. Ask a qualified installer or contractor to install those parts and accessories. Use of unauthorized parts and accessories or improper installation of parts and accessories can result in water or refrigerant leakage, electrical shock, fire, or explosion.

Read the User's Manual carefully before using this product. The User's Manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.

If you have any inquiries, please contact your local importer, distributor, or retailer.

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JMI-0107

JQA-1452

About ISO 9001

ISO 9001 is a plant certification system defined by the International Organization for Standardization (ISO) relating to quality assurance. ISO 9001 certification covers quality assurance aspects related to the "design, development, manufacture, installation, and supplementary service" of products manufactured at the plant.

EC99J2044

About ISO 14001

ISO 14001 is the standard defined by the International Organization for Standardization (ISO) relating to environmental management systems. Our group has been acknowledged by an internationally accredited program of environmental protection procedures and activities to meet the requirements of ISO 14001.

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EDUS281104
Printed in U.S.A. 4/2011 B AK